### This Page Is Inserted by IFW Operations and is not a part of the Official Record

### BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

### IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problem Mailbox.

THIS PAGE BLANK (USPTO)

Human novel secret Human polypeptide Novel human diagno Cell structure and Human protein sequ Human secreted pro

Herbicidally activ Transporters and i Arabidopsis thalia Arabidopsis thalia

```
Nucleic acids having the sequences of clones isolated from libraries different human tissues, useful in recombinant DNA methodologies -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cell structure and motility-associated protein from DKFZphutel_24j6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; gene therapy; vaccine; disease treatment; detection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                                                                                                                                        ABG75821
AAG09603
AAG09604
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB78954
AAB76809
AAY81756
ABU01535
AAW80675
                    ABG95320
AAM40920
                                                                                                                                                                                                                                                                                                                                                                                                AAU44669
AAG83020
                                                                                                                                                                                                                                                                             ABG76953
ABB05602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABB57889
AAB86970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABB67155
AA014190
                                                                                                                                                                                                                                      AAG09605
                                                                                                                                                                                                                                                                                                                                                           AAG92976
                                                                                                                                                                                                                     ABP65787
                                                                                                                                                                                                                                                                                                                                           AAU03207
                                                                                                                                                                                                                                                            ABB63904
                                                                                                                                                                                                                                                                                                                                                                                                                                         AAG89887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAG28044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GEHU-) GERMAN HUMAN GENOME PROJECT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABU52922 standard; Protein; 571 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-AUG-2000; 2000WO-IB01496.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0149499,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-APR-2003 (first entry)
  93833

93933

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93935

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93955

93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-327840/34.
N-PSDB; ABX71330.
                                                                                                                                                                                                                                                                                                                                                         61.1
555.7
555.0
250.2
220.7
100.3
6.2
6.2
6.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200112659-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-AUG-1999;
28-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wiemann S;
                                                                                                                                                                                                                                                                                                                                                         119
115.5
115.5
115.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 114
113.5
113.5
113.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               113
112
111.5
109.5
109.5
1789
1789
1630
1611
1470.5
859
606
302
295
181.5
                                                                                                                                                                                                                                                          128
123.5
123.5
                                                                                                                                                                                                                                                                                                                                                                                                                                       114.5
114.5
114.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABU52922;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABU52922
  Cell structure and Human polypeptide Human EXMAD-23 SEQ Human Secreted pro Human secreted pro Human polypeptide Human polypeptide Human polypeptide
                                                                                                                                 5, 2003, 18:25:06 ; Search time 50 Seconds (without alignments) 1812.657 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A Geneseq 19Jun03:*

| SIDSIJgcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
| SIDSIJgcgdata/geneseqfyeneseqp-embl/AA1981.DAT:*
| SIDSIJgcgdata/geneseqg-embl/AA1981.DAT:*
| SIDSIJgcgdata/geneseqg/emeseqg-embl/AA1981.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA1981.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA1981.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA1991.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA1991.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA1992.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA1992.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA1993.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA2003.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA2003.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA2003.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA2003.DAT:*
| SIDSIJgcgdata/geneseqg/geneseqg-embl/AA2003.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                                                                                                                                                                                                                                                    MTRAGDHNRQRGCCGSLADY.....ACGPDAKEVRKENQANTSVV
                  5.1.6
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                       1107863 segs, 158726573 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                GenCore version (c) 1993 - 2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                            - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAM39134
AAB27245
AAE23866
AAY29327
AAU39053
ABB55762
ABP41875
ABB89115
                                                                                                                                                                                                                                                                                           BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩI
                                                                                                                                                                                                                                                                                                                                                                                                                                 length: 0
length: 2000000000
                                                                                                                                                                                                             US-09-715-927-6
2929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             571
571
571
571
571
571
571
571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                  Copyright
                                                                                                                                   November
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0
100.0
100.0
99.9
99.6
99.6
68.9
68.9
```

Propionibacterium
S. epidermidis ope
C. glutamicum prote
C. glutamicum sRT
Corynebacterium gl
Streptococcus pneu
S. pneumoniae type
S. pneumoniae prot

sed sed

Minimum DB Maximum DB

Database

Title: Perfect score:

Sequence:

protein

ĕ

Run on:

Scoring table:

Searched:

Rat\_glucose transp Drosophila melanog

D. melanogaster pe Drosophila melanog Staphylococcus epi Arabidopsis thalia Arabidopsis thalia

of

2929 2929 2929 2925 2917 2917 2018 1789

126459786

Result No.

transporter

Human

Bifidobacterium lo Fruit fly G protei C glutamicum prote Drosophila melanog

Drosophila melanog Human protein, hom Human glucose tran Bifidobacterium lo Arabidopsis thalia

```
from human cDNA libraries which can be used for gene therapy or in vaccines. The polymucleotides of the invention and antibodies encoded by them may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate polypeptide expression. The products of the invention may also be used to identify modulators of expression and activity and to down regulate expression and activity and to down regulate expression and activity and to be used as diagnostic agents for detecting the presence of polypeptides in samples. This sequence represents a polypeptide in the disclosure of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LIMYHGWVLTSCYILIITIANIANIASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EEETELKOLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EEFTELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLMSFDLTVTQLL 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TWIRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP 420
                                                                                                                                                                                                                                                                                                                                                                 1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRWWHFAVSVFLVELYGNSLLL 60
                                                  invention describes novel polynucleotides and polypeptides isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                     TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIIIMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QENVIESERGIINGVQNSMNYLLDDLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                               1 MTRAGDHNRORGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                             Length 571;
                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                         100.0%; Score 2929; DB 22;
100.0%; Pred. No. 8.7e-271;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FAQNTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541 FAGNTLGNKLFACGPDAKEVRKENQANTSVV 571
                 21; Page 537; 1095pp; English
                                                                                                                                                                                                                                                                                           Best Local Similarity 100.
Matches 571; Conservative
                                                                                                                                                                                                                                           571 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                This
```

8 요 ò 임 à g & Q ò ద g

ે

원

8

ò

임

ò

```
The invention relates to human nucleic acids (AAIS7788-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntingcon's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as Immune system suppression, Activin/inhibin activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Note: The sequence data for this patent did not form part of the printed specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MTRAGDHNRQRGCGGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 LTMYHGWVLTSCYILIITIANIANLASTATAITIORDWIVVVAGEDRSKLANMNATIRRI
Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemotactic; thrombolytic; drug screening; arthritis; inflammation; danseming; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel nucleic acids and polypeptides, useful for treating disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ren F, W.
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 2929; DB 22; Length 571; 100.0%; Pred. No. 8.7e-271; ive 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chen R, Ma Y,
Xu C, Xue AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 4; SEQ ID NO 2279; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Goodrich R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    such as central nervous system injuries
                                                                                                                                                                                                                                                                                                                                                             21-JAN-2000, 2000US-0488725.
25-APR-2000, 2000US-0552317.
9-JUL-2000, 2000US-059042.
19-JUL-2000, 2000US-062312.
03-AUG-2000, 2000US-0653450.
14-SEP-2000, 2000US-0653450.
19-OCT-2000, 2000US-063391.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Liu C, Asundi V,
Wang Z, Wehrman T,
Zhou P, Goodrich F
                                                                                                                                                                                                                                                                                                               26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 Similarity 100.
571; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-442253/47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    571 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB; AAIS8290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C.N.S disorders.
                                                                                                                                                                                                     WO200153312-A1.
                                                                                           leukaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wang J, V
Zhao QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tang YT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
```

ö

Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS;

Human polypeptide SEQ ID NO 2279.

(first entry)

RESULT 2
AAM39134
XX
XX
AC AAM
XX
DT 22-I
XX
XX
CHUM
KW HUM
KW PET

AAM39134 standard; Protein; 571

AAM39134;

m

g

8

ò

g

Ωp

ò

ò

qq

a à

ð

```
571; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ferroportin 1
EXMAD-21,
                                                                                                     Similarity
                                                                571 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Key.
Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200233119-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-SEP-2002
  EXMAD-20,
                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                   Н
                                                                                                                                                                                            61
                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                Sequence
                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE23866
                                                                                         Query Match
                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mutein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human
                                                                                                      Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
 8X8688
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   рþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                            ò
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ծ
                                                                                                                             420
                                                                                                                                                       420
                                                                                                                                                                                480
                                                                                                                                                                                                          480
                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                            540
DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isolated polynucleotide encoding extracellular matrix or adhesion-associated protein (EXMAD) useful for diagnosing, treating, or preventing disorders associated with expression of EXMAD such as proliferative, immune and genetic disorders -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DAM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention provides the protein and coding sequences for 25 novel extracellular matrix and adhesion-associated proteins (EXMADS). These are designated EXMAD-1, EXMAD-3, EXMAD-4, EXMAD-5, EXMAD-6, EXMAD-10, EXMAD-11, EXMAD-12, EXMAD-13, EXMAD-11, EXMAD-11, EXMAD-19, EXMAD-13, EXMAD-14, EXMAD-15, EXMAD-16, EXMAD-17, EXMAD-19,
                                       EETELKOLNLHKDTEPKPLEGTHLMGVKDSNIHELEHBOEPTCASOMAEPFRTFRDGWV
                                                                                         SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                        EEETELKOLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                          SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                            TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                            TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRPIQGESITP
                                                                                                                                                                              TKI PEITTEIYMSNGSNSANI VPETSPESVPIISVSLL FAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                               QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                  QENVIESERGIINGVQNSMXLLDLIHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Extracellular matrix and adhesion-associated protein; EXMAD; cancer; inflammation; reproductive disorder; cardiovascular disorder; immune disorder; musculoskeletal disorder; developmental disorder; gastrointestinal disorder; cell proliferation disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ፫
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Baughn MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ή
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yue
                                                                                                                                                                                                                                                                                     571
                                                                                                                                                                                                                                                                                                              571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                      FAQNTLGNKLFACGPDAKEVRKENOANTSVV
                                                                                                                                                                                                                                                                                    FAONTLGNKLFACGPDAKEVRKENOANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      La1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page 109-110; 129pp; English
                                                                                                                                                                                                                                                                                                                                                                              Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YT,
                                                                                                                                                                                                                                                                                                                                                                              571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human EXMAD-23 SEQ ID NO: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0133643.
99US-0150409.
                                                                                                                                                                                                                                                                                                                                                                             AAB27245 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000WO-US12811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (INCY-) INCYTE GENOMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hillman JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-007395/01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-007395/
N-PSDB; AAC66912.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200068380-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11-MAY-1999;
23-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                27-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , y
181
                                                241
                                                                          301
                                                                                                   301
                                                                                                                             361
                                                                                                                                                     361
                                                                                                                                                                              421
                                                                                                                                                                                                       421
                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                       AAB27245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bandman
Azimzai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ношо
                                                                                                                                                                                                                                                                                                                                                                AAB27245
                                                                                                                                                                                                                                                                                                                                                  RESULT
```

```
ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                  9
They are
                    useful in the prevention and treatment of cancers, cell proliferation, cardiovascular, reproductive, immune, musculoskeletal, developmental and gastrointestinal disorders and inflammation.
                                                                                                                                                                                                                                                                                                                                                                                             TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QENVIESERGIINGVQNSMNYLLDLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                              TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 DÓLTNILAPMAVGÓIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EEETELKOLNLHKDTEPKPLEGTHLMGVKDSNIHELEHBOEPTCASOMAEPPRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 EEETELKOLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                              LIMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; ferroportin 1; hereditary haemochromatosis; therapy; mutant;
  EXMAD-24 and EXMAD-25.
                                                                                                                                                                                                                     .;
0
                                                                                                                                                                     Length 571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "Wild type Ala subtituted with Asp"
                                                                                                                                                                                                                     Indels
                                                                                                                                                                     DB 22;
                                                                                                                                                                                            8.7e-271;
                                                                                                                                                                                                                     .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FAONTLGNKLFACGPDAKEVRKENOANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FAQNTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                   100.0%; Score 2929;
100.0%; Pred. No. 8.
  EXMAD-22, EXMAD-23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAE23866 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
```

```
21-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                         WO9937674-A1
                                                                                                                                                                                                                                                                                                                                                                                                                               20-JAN-1999;
22-JAN-1998;
                                                                                                                    29-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                 29-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jacobs K,
Treacy M,
            541
                                                                                            AAY29327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e.g.
                                            AAY29327
            g
                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAVYGLVVAGSVLVLGXIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LIMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITF 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                   The invention relates to mutations in the gene coding for human ferroportin I associated with hereditary haemochromatosis and methods for the diagnosis of hereditary haemochromatosis based on the identification of such mutations. Polynucleotides of the invention are used for the production of recombinant mutated ferroportin 1, its fragment or a chimeric protein including the fragment, in order to study the functional characteristics of the mutated protein. They are also used for diagnostic and therapeutic purposes. The present sequence is human ferroportin I mutant protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MTRAGDHNRORGCCGSLADYLTSAKFLLYLGHSLSTWGDRWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DQLTNILADMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BESTELKQINLHKDTEPKPLEGTHLMGVKDSNIHBLEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TKI PEITTEIXMSNGSNSANI VPETSPESVPII SVSLLFAGVIAARIGIMSFDLTVIQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SYYNOPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TKI PEITTEIYMSNGSNSANI VPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QENVIESERGIINGVONSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYPR
                                                                                                                                                                                                                                                                                                                                                                                                                            MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                               Novel nucleic acid coding for ferroportin 1 useful for the in vitro diagnosis of hereditary hemochromatosis in a mammal, comprises a mutation of the codon coding for the ferroportin 1
                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                Length 571;
                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                              Score 2925; DB 23;
Pred. No. 2.1e-270;
0; Mismatches 1;
                                                                                                                                                                                                              Claim 13; Page 35-36; 37pp; English.
                                                                                                                                                                                                                                                                                                                                                                                99.94;
                                 17-OCT-2001; 2001WO-EP12018.
                                                        17-OCT-2000; 2000IT-MI02240.
                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                (PIET/) PIETRANGELO
                                                                                                                              WPI; 2002-444246/47.
N-PSDB; AAD38291.
                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 570; Conserv
                                                                                                                                                                                                                                                                                                                                                         571 AA
                                                                                                      Pietrangelo A;
         25-APR-2002
                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ż
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

ò g ò ò 셤 ð

```
The present sequence represents a human secreted protein. Human secreted protein polynucleotides and proteins are predicted to have biological activities which would make them suitable for treating, preventing or ameliorating medical conditions in humans and animals, although no supporting data is given. Suggested activities include nutritional activity, cytokine and cell proliferation/differentiation activity, haemacopoiesis regulating activity, tissue growth activity, activity, chemotactic/chemokinetic activity, and thrombolytic activity, receptor/ligand activity, and thrombolytic activity, receptor/ligand activity, and tumour invasion suppressor activity, and tumour invasion suppressor activity, and tumour inhibition activity. The polynucleotides are also stated to be useful
                                                                                                                                                                                                                                                                                                                                                                                                                                    differentiation; immune stimulating; vaccine; suppression; gene therapy; haematopoiesis regulation; tissue growth; activin; inhibin; cadherin; chemotactic; chemokinetic; haemostatic; thrombolytic; anti-inflammatory; tumour invasion suppressor; tumour inhibition.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New polynucleotides encoding secreted human proteins derived from,
                                                                                                                                                                                                                                                                                                                                                                                                                  Human; secreted protein; nutrition; cytokine; cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Collins-Racie LA, Fechtel K; McCoy JM, Merberg D, Steininger RJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fetal brain potentially used as immunostimulators
                                                                                                                                                                                                                                                                                                                                                      Human secreted protein clone ew150_1 protein sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 2917; DB 20;
Pred. No. 1.2e-269;
0; Mismatches 2;
                                 571
/label= unknown
/note= "encoded by RAT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 16; Page 115-117; 139pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ģ
                                                                                                                                                                               Ą.
                                                                                                                                                                               571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "encoded
504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0235609.
98US-0072134.
                                                                                                                                                                            AAY29327 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99WO-US01404
                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GEMY ) GENETICS INST INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 99.6
Matches 569; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , Clark HF,
Lavallie ER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1999-458682/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wong GG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          571 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAX90442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or gene therapy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Agostino MJ,
```

ö

541 FAQNTLGNKLFACGPDAKEVRKENQANTSVV 571

셤

g

ò

엄

ò

```
240
                                                                                                                                                                                                        300
                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                     360
                                                                                          180
                                                                                                                                       240
                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                              480
                       9
              121 LTMYHGWVLTSCYILITITANIANIASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                           TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                        LTMYHGWVLTSCYILLITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                    DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                 EEETELKQINLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                            SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                         TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                      TKIPBITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                    TKIPBITTBIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                  QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                               571
                                                                                                                                                                                                                                                                                                                                                                                                                           FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                              FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAU39053 standard; Protein; 571 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human secreted protein ew150_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                            61
                                                                  61
                                                                                        121
                                                                                                                                    181
                                                                                                                                                          181
                                                                                                                                                                                 241
                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAU39053;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAU39053
                                           ઠે
                                                             g
                                                                                       ò
                                                                                                           g
                                                                                                                                δ
                                                                                                                                                       엄
                                                                                                                                                                              ò
                                                                                                                                                                                                원
                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

Human; secreted protein; antiinflammatory; immunosuppressive; nootropic; neuroprotective; antiarthritic; antimicrobial; vulnerary; oytosteric; antidiabetic; virucide; antiinfertility; anticonvulsant; vasotropic; antiparkinsonian; immunostimulant; dernatological; antirheumatic; antitumor; antiulcer; osteopathic; tranquiliser; cerebroprotective; cytokine; cell proliferation; cell differentiation; immune deficiency; severe combined immunodeficiency; SCID; tumour; autoimmune disorder; multiple sclerosis; rheumatoid arthritis; agraft-versus-host disease; mysloid deficiency; wound healing; ulcer; periodontal disease; soteoporosis; osteoporosis; osteoporosis; osteoporosis; sexions disease; funtington's disease; stroke; sepsis; inflammatory bowel disease; contraceptive; immunogen; 

d ò 원 ò g

Homo

WO200175068-A2

food supplement; vaccine

11-OCT-2001

22-MAR-2001; 2001WO-US09369.

```
cids encoding them. The protein may exhibit cytokine, cell proliferation of cell differentiation activity or may induce production of other or call differentiation activity or may induce production of other or immune suppressing activity, which is useful for the treatment of various immune deficiencies and disorders e.g. severe combined immunedeficiency (SCID), autoimmune disorders e.g. severe combined systemic lupus erythematosus, rheumatoid arthritis, autoimmune pulmonary inflammation. The proteins are also useful in the treatment of diseases and disorders including tissue, skin and organ transplantation and in graft-versus-host diseases (GVID), in the induction of tumour immunity, myeloid or lymphoid cell deficiencies, wound healing and tissue repair, in the treatment of burns, incisions and ulcers; as well as in treatment of periodontal disease, osteoporosis or osteoarthritis, mediated by inflammatory processes, disease, thutington's disease, amylotrophic lateral sclerosis, and Shy-brager syndrome, infections, infarction of cardiac and central nervous system vessel e.g. stroke, amylotrophic lateral sclerosis, and Shy-brager syndrome, infections, infarction of cardiac and central nervous system vessel e.g. stroke, sepsis, inflammatory bowel disease, ulcers, bone regeneration. The protein, having activin- or inhibin-related activities is useful as a contraceptive based on the ability of inhibins to decrease fertility in the decrease spermatogenesis in male mammals.
                                                                                                                                                                                                                                                                                      Secreted human proteins, useful as vaccine for treating various diseases such as autoimmune disorders (e.g. multiple sclerosis), and
                                                                                                                                                                                                                                                                                                                                                                                                                                    invention relates to novel human secreted proteins, the nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             present sequence represents a secreted protein of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      proteins and nucleic acids are also useful as food supplements.
                                                                                                                         : g
                                                                                                                         Evans
Wong
                                                                                                                    Lavallie E, Collins-racie LA,
[, Steininger RJ, Spaulding V,
Merberg D;
                                                                                                                                                                                                                                                                                                               diseases such as autoimmune disorders (e.g. nervous system disorders (e.g. stroke) -
                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 542-544; 619pp; English
30-MAR-2000; 2000US-0539330.
04-DEC-2000; 2000US-0729674.
                                                                                                                                                MJ.
                                                                        (GEMY ) GENETICS INST
                                                                                                                                                Agostino M
Fechtel K,
                                                                                                                                                                                                                WPI; 2001-639363/73.
N-PSDB; AAS59271.
                                                                                                                    Jacobs K,
Treacy M.
                                                                                                                                                                    Clark H,
```

571 AA; Sequence

```
180
                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                300
                                                                   9
                                                                                              9
                                                                                             1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                           LIMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMVATIRRI
                                                                                                                                                                                                                                                                                                                                  TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                        LIMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                   DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                             SYYNOPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                   Gaps
                                                              1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRWWHFAVSVFLVELYGNSLLL
                                   ö
    Length 571;
                                   Indels
   Score 2917; DB 22;
Pred. No. 1.2e-269;
0; Mismatches 2;
99.68;
                                   Conservative
                   Similarity
Query Match
Best Local Simi
Matches 569;
                                                                                                                           61
                                                                                                                                                                                      121
                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                               241
```

SYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF

301

셤 ò q ò 셤

ò

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                  Human; clone bd306-7; clone yb8-1; ATCC number 98599; gene therapy; immune disorder; bacterial infection; fungal infection; cancer; tumour; autoimmune disorder; systemic lupus erythematosus; wound; ulcer; inhibin; osteoporosis; osteoarthritis; nervous system disorder; neuropathy; Alzheimer's disease; Parkinson's disease; Huntington's disease; activin; haemophilia; cardiac infarction; stroke; sepsis; archritis; vulnerary; ischaemia-reperfusion injury; inflammatory bowel disease; chemotactic; crohn's disease; cytostatic; anti-inflammatory; immunomodulator; neuroprotective; haemostatic; thrombolytic; anti-inflammatory.
                                                                   540
                                                                             QENVIESERGIINGVQNSMNYLLXLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR 540
420
               420
                                 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL 480
                                                  TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL 480
               TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                   QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Evans C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     McCoy JM, LaVallie ER, Collins-Racie LA,
                                                                                                      571
                                                                                                               FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                      FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                ABB55762 standard; Protein; 571 AA
                                                                                                                                                                                                                     Human polypeptide SEQ ID NO 130.
                                                                                                                                                                                                                                                                                                                                                                                                                       98US-070346P.
98US-070643P.
98US-070755P.
                                                                                                                                                                                                                                                                                                                                                                                                        97US-067454P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-071304P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-072134P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-073095P.
                                                                                                                                                                                                                                                                                                                                                                             2000US-0729674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0539330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0197886
                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MCCOY J M.
LAVALLIE E R.
COLLINS-RACIE L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGOSTINO M J.
STEININGER R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPAULDING V. WONG G G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FECHTEL K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MERBERG D.
TREACY M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JACOBS K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EVANS C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLARK H.
                                                                                                                                                                                                                                                                                                                                           US2001039335-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-JAN-1998;
18-FEB-1998;
30-MAR-2000;
23-NOV-1998;
                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                              04-DEC-2000;
                                                                                                                                                                                                   14-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-JAN-1998;
22-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                             08-NOV-2001,
                                                                                                                                                                                                                                                                                                                                                                                                        04-DEC-1997,
20-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                        02-JAN-1998
07-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                10-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                          08-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jacobs K,
                                                                                                                                                                                   ABB55762;
               361
                                                                                    481
                                                                                                      541
                                 421
                                                  421
                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MCCO/)
(LAVA/)
(COLL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (JACO/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (AGOS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (EVAN/)
(MERB/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TREA/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (MONG/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SPAU/
                                                                               Dp
                                                                                                                                                                           임
                                ò
                                              셤
                                                                 8
                                                                                                    ò
                                                                                                                     셤
```

```
The invention relates to isolated polymucleotides (ABA90876-ABA90968 and ABA90980) and encoded proteins (ABB55698-ABB5800), especially CC ABA90980) and encoded proteins (ABA90876) in and SEQ ID NO 19 (ABA90885) and CC polymucleotides SEQ ID NO 1 (ABB55698) and SEQ ID NO 20 (ABB55707) contained in proteins SEQ ID NO 2 (ABB55698) and SEQ ID NO 20 (ABB55707) contained in clones bd306-7 and yb8-1 respectively and the clones bd306-7 and yb8-1 care deposited with the American Type Culture Collection (ATCO) with accession number 98599. The polymucleotides and encoded polypeptides have cytostatic, anti-inflammatory, immunomodulator, vulnerary, can anti-inflammatory activity and acting as cytokine modulators. An amatopoiesis regulators, tissue growth modulators and/or cadherin contrapies, particularly for preventing, treating or ameliorating any of the following diseases: immune deficiency and disorders; e.g. bacterial contrapies, particularly for preventing, treating or ameliorating any of the following diseases: immune deficiency and disorders; e.g. bacterial cor fungal infections, autoimmune disorders, catcer, systemic lupus certythematosus or graft-versue-host disease; myeloid or lymphoid cell deficiencies; wound, burns, incisions and ulcers, osteoporosis or corecarchritis; central and peripheral nervous system diseases and coursopathies, e.g. Alzheimer's, parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis or Shy-Drager syndrome; consurpathies, e.g. Alzheimer's, parkinson's disease, Huntington's cor systemic inflammatory response syndrome, ischaemia-reperfusion or stroke, inflammatory bowel disease or injury, endotoxin lethality, arthritis, inflammatory bowel disease or core, continued and peripheral syndrome, ischaemia-reperfusion or tumours or cancers, pemphigus vulgaris or pemphigus core, and the core cancers, pemphigus vulgaris or pemphigus cancers, pemphigus or graft and cancers, pemphigus core, and cancers or cancers, pemphigus cancers, pemphigus cancers and cancers, pemphigus cancers and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 EEETELKQLNLHKDTBPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLTSTWGDRWWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LIMYHGWVLTSCYILLITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DQLTNILLAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                   New secreted proteins and encoding polynucleotides, useful in gene therapies, particularly for preventing or treating autoimmune disorders, cancer, graft-versus-host disease, wound, osteoporosis, stroke or inflammations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .
0
Spaulding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
    Steininger RJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99.6%; Score 2917; DB 23; 99.6%; Pred. No. 1.2e-269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99.6%; Pred. No. 1.2e
ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 270-271; 349pp; English.
    D, Treacy M, Agostino MJ,
Clark H, Fechtel K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         569; Conservative
                                                                                                                           2002-040725/05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           571 AA;
                                                                                                                                                                      N-PSDB; ABA90940
Merberg D,
Wong GG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              foliaceus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
```

ö

420

360

SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF 360

301 301 361 361

SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF

TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP 420

```
The invention relates to 2175 novel human ovarian antigens (ABP41054-ABP43228) and to cDNAs encoding them (ABD54131-ABQ56305), and also encompasses polypeptides 90% identical and polynucleotides 95% identical to the sequences of the invention. The invention additionally relates to recombinant vectors and host cells comprising human ovarian antigen polynucleotides against human ovarian antigens in polynucleotides and polypeptides in diagnosing, treating, prognosing or preventing various ovary and/or breast-related disorders. Such conditions include ovarian cancer and breast cancer, and metastatic tumours of ovarian or breast origin, reproductive system disorders (e.g., infertility, disorders of pregnancy, anovulation, polycystic ovary syndrome, ovarian cysts, and dysmenorrhoea), endocrine disorders, infections (e.g., chlamydia, HIV, toxoplasmosis, and toxic shock syndrome), inflammatory conditions (e.g., mastitis, ophoritis and vaginitis), immune disorders (e.g., congenital and acquired
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; ovarian antigen; ovary; ovarian; breast; cancer; tumour; ovarian cancer; breast cancer; tumour; reproductive system disorder; infertility; pregnancy disorder; anovulation; polycystic ovary syndrome; PCOS; ovarian cyst; dysmenorrhoea; endocrine disorder; infection; inflammatory condition; immune disorder; blood disorder; arction; cardiovascular disorder; respiratory disorder; neurological disorder; gastrointestinal disorder; urinary system disorder; drug screening; gene therapy; chromosome mapping; forensic analysis; antibody preparation; cytostatic; immunomodulatory; neuroprotective; antiinflammatory; gynaecological; reproductive.
TKI PEITTEIYMSNGSNSANI VPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                              TKIPBITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLMSFDLTVTOLL
                                                                                QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYPR
                                                                                                                 481 QENVIESERGIINGVQNSMNYLLXLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleic acid molecules encoding novel ovarian polypeptides, a the prevention, treatment and diagnosis of cancer (e.g. cancer), immune disorders, cardiovascular disorders and
                                                                                                                                                                                                                                                                                                                                                                                                                                           Human ovarian antigen HISBE12, SEQ ID NO:3007.
                                                                                                                                                                     571
                                                                                                                                                                                                      FAQNTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 11; SEQ ID No 3007; 2922pp; English.
                                                                                                                                                                 FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                               ABP41875 standard; Protein; 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-JUN-2001; 2001WO-US18569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-JUN-2000; 2000US-209467P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   neurological diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Birse CE, Rosen CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002-147878/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB; ABQ54952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful in the p
ovarian cancer)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                    22-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        03-JAN-2002
                                                                                                                                                               541
421
                                         421
                                                                                                                                                                                                                                                                                                                                                          ABP41875;
                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Isolated
                                                                                                                                                                                                                                                                                             ABP4187
                                                                                                                 g
                                                                                                                                                                 ò
                                                                                  ઠ
```

```
ö
immunodeficiencies, autoimmune oophoritis, systemic lupus erythematosus), blood-related disorders (e.g., anaemia), cardiovascular disorders, respiratory disorders (e.g., anaemia), cardiovascular disorders, and utinary system disorders. Ovarian antigen polypeptides and polypeptides and polymucleotides may also be used in screening for compounds which modulate ovarian antigen expression or activity. The polymucleotides may further be used for gene therapy, chromosome mapping, in the identification of individuals and in forensic analysis, and the polypeptides may be used as food additives or to prepare antibodies useful, in disease diagnosis, drug targeting and phenotyping. The present sequence represents a human ovarian antigen of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            136 WVSYYNQPVPLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTV 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; heparotropic; antidiabetic; antifinamatory; antiulcer; vulnerary; anticonvulsant; antidacterial; antifungal; antiparasitic; cardiant; gene therapy; cancer; immune disorder; cardiovascular disorder; neurological disease; infection; human; secreted protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TPTKI PEITTEI YMSNGSNSANI V PETSPES V PIISVSLLFAGVIAAR I GLMS FDLTVTQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 316 LLQENVIESERGIINGVQNSMNYLLDLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  179 RIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LKEEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WVSYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TPTKI PEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLMSFDLTVTQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LLQENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 408;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68.9%; Score 2018; DB 23;
100.0%; Pred. No. 6.6e-184;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FRFAQNTLGNKLFACGPDAKEVRKENQANTSVV 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FRFAQNTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human polypeptide SEQ ID NO 1491.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABB89115 standard; Protein; 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-MAY-2001; 2001WO-US16450.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-MAY-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fatches 393; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           408 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200190304-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABB89115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABB89115

IID ABB8

XX XX XX

XX XX XX

DT 24-M

XX XX

XX XX

XX XX

XX XX

YUL

YX M OLU

XX M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
          55555555555555555888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
AAW74869 standard; Protein; 383 AA.
                                                                                                                                                                                                                                                                                                                                          The invention relates to novel genes (ABL89449-ABL90853) and proteins (ABB89040-ABB9044) useful for preventing, treating or ameliorating medical conditions e.g. by protein or gene therapy. The genes are isolated from a range of human tissues disclosed in the specification. The nucleic acids, proteins, antibodies and (ant) agonists are useful in the diagnosis, treatment and prevention of: (a) cancer, e.g. breast on ovarian cancer and other cancers of the adrenal gland, bone, bone of marrow, breast, gastrointestinal tract, liver, lung, or urogenital; (b) immune disorders e.g. Addison's disease, allergies, autoimmune thyroiditis, diabetes mellitus, Crohn's disease, multiple sclerosis, rheumatoid arthritis and ulcerative colliss; (c) cardiovascular disorders such as myocardial ischaemias; (d) wound healing; (e) neurological diseases e.g. cerebral anoxia and epilepsy; and (f) infectious diseases e.g. cerebral anoxia and epilepsy; and (f) infectious diseases such as viral, bacterial, fungal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGL 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK
                                                                                                                                                                                                    Novel 1405 isolated polypeptides, useful for diagnosis, treatment and prevention of neural, immune system, muscular, reproductive, gastrointestinal, pulmonary, cardiovascular, renal and proliferative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      370 VRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    190 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ·.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61.1%; Score 1789; DB 23; Length 382; 92.4%; Pred. No. 4.7e-162; cive 3; Mismatches 26; Indels 0
                                                                                                                                                                                                                                                                                                          Claim 11; SEQ ID NO 1491; 2081pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LFACGPDAKEVRKENQANTSVV 571
                                                         (HUMA-) HUMAN GENOME SCI INC
                     19-MAY-2000; 2000US-205515P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 92.4
Matches 353; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        parasitic infections
                                                                                                    Rosen CA;
                                                                                                                                        WPI; 2002-122018/16.
N-PSDB; ABL89524.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               382 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
```

RESULT 10 AAW74869

```
Human, secreted protein, testis, tumour, foetal brain tissue, fusion protein, cancer, central nervous system; seizure, diagnosis, neurodegenerative disease.
                                      Human secreted protein encoded by gene 141 clone HCMSH30
                                                                                         ney Location/Qualifiers Misc-difference 383
                                                                                                        /label= unknown
                                                                                                                                                                                 97US-0040162
97US-0040163
97US-0040334
97US-0040334
97US-0040331
97US-0043312
97US-0043313
97US-0043313
97US-0043313
97US-004356
97US-004356
97US-004356
97US-004356
97US-004367
97US-004367
97US-004367
97US-004367
97US-004367
97US-0047502
97US-0047502
97US-0047502
97US-0047503
97US-0047503
97US-0047503
                                                                                                                                                                                                                                                                                                                                                                         97US-0047584.
97US-0047585.
97US-0047586.
97US-0047587.
97US-0047589.
97US-0047589.
                                                                                                                                                                                                                                                                                                                                                                                                                       970S-0047592.
970S-0047593.
970S-0047594.
970S-0047595.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-0047599.
97US-0047600.
97US-0047601.
97US-0047612.
                          (first entry)
                                                                               Homo sapiens
                                                                                                                      WO9839448-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAY-1997;
                                                                                                                                   11-SEP-1998.
                                                                                                                                                 06-MAR-1998;
                          25-JAN-1999
                                                                                                                                                                                                                                                                                                                                          997
                                                                                                                                                                                                                                                                                                                                                 23-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                 997
                                                                                                                                                                                                                                                                                                                                                                           23-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                          23-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                       23-MAY-1997
                                                                                                                                                                                                                                                 1-APR-19
11-APR-19
11-APR-1
            AAW74869
                                                                                                                                                                                                                                                                             11-APR-1
11-APR-1
11-APR-1
                                                                                                                                                                                                                                                                                                                                                                                        23-MAY-
                                                                                                                                                                                                                                                                                                                                                                                               23-MAY-
```

σ

ö

249

9

309

489

300 549

429 240

us-09-715-927-6.rag

```
The invention relates to 186 novel genes and their fragments (nucleic acid sequences: AAV59511-V59812; amino acid sequences AAV731-W75026) which are useful for preventing, treating or ameliorating medical conditions e.g. by protein or gene therapy. Also, pathological conditions can be diagnosed by determining the amount of the new polypeptides in a sample or by determining the presence of mutations in the new polymoclecides. Specific uses are described for each of the 186 polymuclectides, based on which tissues they are most highly expressed in (see AAV59511 for described uses).
                                                                                                                                                                                                                                                                                                                                       AGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGL 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GIINGVONSMYYLLDLLHFIMVILAPNPBAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regeneration;
                                                                                                                                                                                                                                                                                                   61 NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL
                                                                                                                                                                                                                                                                                                                                                         181 GSAGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER
                                                                                                                                                                                                                                              MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQL
                                                                                                                                                                                                                                                                               NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL
                                                                                                                                                                                                                            190 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKOL
                                                                                                                                                                                                                                                                                                                                                                                            370 VRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK
                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rheumatoid arthritis; hyperproliferative disorder; breast neoplasm; liver neoplasm cardiovascular disorder; cardiac arrest; skin aging; cerebrovascular disorder; cerebral ischaemia; angiogenesis; sumburn; nervous system disorders; Alzheimer's disease; infection; ocular disorder; corneal infection; wound healing; tissue regeneratic epithelial cell proliferation; organ transplantation; food additive; preservative; nutritional.
                                                                                                                                                                                                ,
0
                                                                                                                                                                     Length 383;
                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; secreted protein; autoimmune disease; chemotaxis;
                                                                                                                                                                                                  26;
                                                                                                                                                                     61.1%; Score 1789; DB 19; 92.4%; Pred. No. 4.7e-162; ive 3; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human novel secreted protein #141.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABG95320 standard; Protein; 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0149476.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97US-038621P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                  Best Local Similarity >2.4
Matches 353; Conservative
                                                                                                                                             383 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US6420526-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-JAN-2003
                                                                                                                                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                                                                 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                  430
                                                                                                                                             Sequence
                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                     -1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABG95320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABG95320
       8888888888888
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence represents a secreted human protein encoded by the nucleic acid molecule designated Gene 141 from the human cDNA clone HCMSH30 (deposited as clone ATCC 97902 and ATCC 209048).

The gene can be used to generate fusion proteins by linking to the gene to a human immunoglobulin Fc portion (e.g. AMV59502) for increasing the stability of the fused protein as compared to the human protein only.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated human genes and the secreted polypeptide(s) they encode - useful for diagnosis and treatment of e.g. cancers, neurological disorders, immune diseases, inflammation or blood disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Endress GA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , Hu JS;
Rosen CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Greene JM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brewer LA, Carter KC, Duan R, Ebner R, Fie AM, Fischer CL, Florence KA, Greene JM, eur DW, Li Y, Moore PA, Ni J, Olsen HS, i Y, Soppet DR, Young PE, Yu GL, Zeng Z;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page 624-625; 721pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ferrie AM, Fischer CI
Lafleur DW, Li Y, Mc
, Shi Y, Soppet DR,
97US-0047613.
97US-0047614.
97US-0047615.
97US-0047615.
97US-0047632.
97US-0047633.
97US-0047633.
97US-0047633.
97US-0048974.
97US-0048974.
97US-005631.
97US-0056631.
97US-0056631.
97US-0056631.
97US-0056817.
97US-0056817.
97US-0056817.
97US-0056817.
97US-0056817.
97US-0056817.
97US-0056818.
97US-0056819.
97US-0056819.
97US-0056819.
97US-0056819.
97US-0056819.
97US-0056819.
97US-0056819.
97US-0056819.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HUMA-) HUMAN GENOME SCI INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-0057761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97US-0058785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1998-506364/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAV59651.
                                      23 - MAX - 1997;
06 - JUN - 1997;
13 - JUN - 1997;
08 - JUL - 1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bednarik DP,
                                                                                                                                                                                           22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                                                                                                                              22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                                                                                                                                                                                                22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                      22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                       997
                                                                                                                                                                                 997
                                                                                                                                                                                                                                                                                                      22-AUG-1997
22-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-AUG-1997
22-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Feng P,
Kyaw H,
Ruben SM,
```

```
97US-040161P.
97US-040162P.
97US-040163P.
97US-040333P.
97US-040334P.
                                97US-040336P.
97US-040626P.
97US-043311P.
97US-043312P.
                                                           97US-043313P.
97US-043314P.
97US-043315P.
                                                                                     97US-043569P.
97US-043576P.
97US-043578P.
                                                                                                                                                                                97US-047581P.
97US-047582P.
97US-047583P.
                                                                                                                                                                                                                                                                                                                                                                      97US-048964P.
97US-048974P.
97US-049610P.
                                                                                                        97US-043580P.
97US-043669P.
97US-043670P.
                                                                                                                                                                                                                                                                                                                              97US-047614P.
97US-047615P.
97US-047617P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97US-056864P.
97US-056872P.
97US-056874P.
                                                                                                                                   97US-043672P.
97US-043674P.
                                                                                                                                                      97US-047500P.
97US-047501P.
                                                                                                                                                                   97US-047502P.
97US-047503P.
                                                                                                                                                                                                                                    97US-047589P.
                                                                                                                                                                                                                                                                                                                                                         97US-047632P.
                                                                              97US-043568P
                                                                                                                                                                                                          97US-047585P.
                                                                                                                                                                                                                                                 97US-047592P.
                                                                                                                                                                                                                                                              97US-047594P.
                                                                                                                                                                                                                                                                     97US-047595P.
                                                                                                                                                                                                                                                                                 97US-047597P.
                                                                                                                                                                                                                                                                                               97US-047599P.
                                                                                                                                                                                                                                                                                                                                                                                          97US-051926P.
                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-056637P.
97US-056662P.
                                                                                                                            97US-043671P
                                                                                                                                                97US-047492P
                                                                                                                                                                                                    97US-047584P
                                                                                                                                                                                                                       97US-047587P
                                                                                                                                                                                                                              97US-047588P
                                                                                                                                                                                                                                                                                                            97US-047601P
                                                                                                                                                                                                                                                                                                                   97US-047612P
                                                                                                                                                                                                                                                                                                                          97US-047613P
                                                                                                                                                                                                                                                                                                                                                   97US-047618P
                                                                                                                                                                                                                                                                                                                                                                                                       97US-055724P
                                                                                                                                                                                                                                                                                                                                                                                                             97US-056630P
                                                                                                                                                                                                                                                                                                                                                                                                                                 97US-056636P
                                                                                                                                                                                                                                                                                                                                                                                                                                                    97US-056664P
                   07-MAR-1997;
07-MAR-1997;
07-MAR-1997;
07-MAR-1997;
                                                                                                                                                                         23-MAY-1997;
23-MAY-1997;
                                              11-APR-1997;
11-APR-1997;
                                                                                           11-APR-1997;
11-APR-1997;
                                                                              11-APR-1997
                                                                                                                                                      23-MAY-1997
                                                                         11-APR-1997
                                                                                                                                                                                                                                    23-MAY-1997
23-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                            06-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                       18-AUG-1997
22-AUG-1997
                                                                                                                                                23-MAY-1997
                                                                                                                                                                                              23-MAY-1997
                                                                                                                                                                                                                       23-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-AUG-1997
```

```
9708 - 0568176

9708 - 0568176

9708 - 0568178

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 05681818

9708 - 0568188

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

9708 - 056818

97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98WO-US04493
                                                                                                                                                                                        22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
22-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JS-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-SEP-1997
                                                                                                                                                                                                                                                                                                                                                       22-AUG-1
22-AUG-1
22-AUG-1
                                                                                                        22-AUG-1
22-AUG-1
8 \times 6 \times 6
```

## (HUMA-) HUMAN GENOME SCI INC.

Bednarik DR; Ferrie AM; Ruben SM, Rosen CA, Fischer CL, Soppet DP, Carter KC, Bec Endress GA, Yu G, Ni J, Feng P, Young PE, Greene JM, Fer Duan R, Hu J, Florence KA, Olsen HS, Ebner R, Brewer LA; Moore PA, Shi Y, Lafleur DW, Li Y, Zeng Z, Kyaw H; WPI; 2002-634796/68. N-PSDB; ABS73638.

New isolated human secreted protein for diagnosing, preventing, treating or ameliorating medical conditions and used as a food additive or preservative

# Example 1; SEQ ID No 460; 129pp; English.

The invention relates to an isolated protein that is one of 186 human secreted proteins, given in the specification, encoded by one of 189 secreted proteins, given in the specification. The protein is used in a pharmaceutical composition used to prevent, treat or ameliorate a medical condition in e.g. humans, mice, rabbits, goats, horses, cats, dogs, chickens or sheep. Disorders which are diagnosed or treated include autoimmune diseases e.g. rheumatoid arthritis, hyperproliferative disorders e.g. arcdiac arrest, cerebrovascular disorders e.g. cerebral ischaemia, angiogenesis, nervous system disorders e.g. Alzheimer's disease, angiogenesis, nervous system disorders e.g. Alzheimer's disease, infections caused by bacteria, viruses and fungi and ocular disorders e.g. corneal infection. The polypeptides can also be used to aid wound chain and epithelial cell proliferation, to prevent skin aging due to sunburn, to maintain organs before transplantation, for supporting cell culture of primary tissues, to regenerate tissues and in chemotaxis. The collure of primary tissues, to regenerate tissues and in chemotaxis. The corponents. The preserv sequence capabilities, fat content, lipid, protein, carbohydrate, vitamins, minerals, cofactors and other nutritional components. The present sequence represents one of the novel human components. This sequence did not form part of the printed specification, but was obtained in electronic formmet directly from USPTO at

## 383 AA; Seguence

Gaps .: 0 Length 383; Indels 61.1%; Score 1789; DB 23; 92.4%; Pred. No. 4.7e-162; ive 3; Mismatches 26; Query Match
Best Local Similarity 92.4
Matches 353; Conservative

ö

us-09-715-927-6.rag

Н

ద δ 61 310 121

g

ò g ò 181 430 241 490

g

ò g ò g ò

550 361

301

AAM40920;

```
The invention relates to human nucleic acids (AAI57798-AAI61369) and
the encoded polypeptides (AAM3642213) with nootropic,
immunosuppressant and cytostatic activity. The polynuclectides are useful
in gene therapy. A composition containing a polypeptide or polynucleotide
of the invention may be used to treat diseases of the peripheral nervous
system, such as peripheral nervous injuries, peripheral nervous
contaised neuropathies and central nervous system diseases, such as
alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic
contaised neuropathies and central nervous system diseases, such as
contained neuropathies and central nervous system diseases, such as
alzheimer's, Parkinson's disease, Huntington's diseases, amyotrophic
contained neuropathies and central nervous system suppression,
contilisation of the activities such as: Immune system suppression,
contilisation of the activity, chemctactic/chemckinetic activity, haemostatic
and thrombolytic activity, cancer diagnosis and therapy, drug screening,
con's disorders.

con's disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVPLHKHEL 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DQLTNILAPMAVGQIMTFGSPVIGCGFISGMLVSMCVEYVLLWKVYQKTPALAVKAGLK 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SYYNQPVFLAGMGLAF-LYMTVLGFDC------ITTGYAYTQGLSGSILSILM 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               347 GASAITGIMGTVAFTWLRRKC-----GLVRTGLISGLAQLSCLI--LCVISVFM 393
                                                                                                                                                                                                                                                                                                                                                                           Note: The sequence data for this patent did not form part of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRWWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LTMYHGWVLTSCYILLITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----SYNWNNGNCSFYLATSKWWFGSDRSDLRIGTAFLFDLVCDLCIHAWKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MTRAGDHNRQRGCCGSLADYLISAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human, chromosome mapping, gene mapping, gene therapy, forensic, food supplement, medical imaging, diagnostic, genetic disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 439;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1630; DB 22;
Pred. No. 9.3e-147;
8; Mismatches 31;
                                                          ID NO 5851; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel human diagnostic protein #20253.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABG20262 standard; Protein; 439 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
tes 333; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                    439 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PG 395
                                                          SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PG 433
                                                                                                                                                                                                                                                                                                                                                                                                specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABG20262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABG20262
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                               309
                                                                                                                 GSAGLISGLAQLSCLILCVISVFWPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE 240
                                                                                                                                                                        AGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGL 369
                                                                                                                                                                                               489
                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                            GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK 549
                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Humnostatic; amyotrophic lateral sclerosis; Shy-brager Syndrome; chemotactic; chemokantic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                         IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER
                MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQL
                                          MAVGQIMIFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGIKEEFTELKQL
                                                                                             NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASOMAEPFRTFRDGWVSYYNQPVFL
                                                                                                                                                                                                                                                 370 VRIGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE
                                                                                                                                                                                                                                                                                                                               IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ren F, W
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chen R, Ma Y,
Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human polypeptide SEQ ID NO 5851.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Asundi V, Che
Wehrman T, Xu
Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAM40920 standard; Protein; 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0662191.
2000US-0693036.
2000US-0727344.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-JAN-2000; 2000US-0488725.
25-APR-2000; 2000US-055317.
09-JUL-2000; 2000US-0598042.
19-JUL-2000; 2000US-0653450.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-442253/47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HYSE-) HYSEO INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Liu C,
Wang Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; AAI60076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-SEP-2000; 2
19-OCT-2000; 2
29-NOV-2000; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   leukaemia.
```

120

9 94 180

214

334

383

431

хт, о,

Tang Zhao

```
394 PG 395
                                                                                                                                                      PG 433
                                                                                                                                                                                                                                                                                                                                                                                                WO200112659-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-AUG-1999;
28-SEP-1999;
                                                                                                                                                                                                                                                                                   15-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                            22-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wiemann S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                     347
                                                                                                                                                       432
                                                                                                                                                                                                                                                       ABU52923;
             301
                                                                                                                                                                                                                                          셤
                                                                   ò
                                                                                              셤
                                                                                                                          ò
                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                              The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and oacid sequences. ABG00010-ABG00377 represent novel human order diagnostic amino acid sequences of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAVYGLVVAGSVLVLGAIIGDWYDKNARLKVAQTSLVVQNVSVILCGIILMMYFLHKHEL 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35 MTRAGDHNRORGCCGSLADYLSSAKFHLXLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LIMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                   New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 439;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1611; DB 22;
Pred. No. 6.1e-145;
9; Mismatches 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                       Claim 20; SEQ ID No 50621; 103pp; English.
                                                                                                                                                                                               Tang YT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55.0%;
78.2%;
                                                                                                                          31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                               30-MAR-2001; 2001WO-US08631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 78.2
Matches 330; Conservative
                                                                                                                                                                                               Drmanac RT, Liu C,
                                                                                                                                                                                                                           2001-639362/73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    439 AA;
                                                                                                                                                                   (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                          N-PSDB; AAS84449
                                       WO200175067-A2.
             Homo sapiens.
                                                                   11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
from human cDNA libraries which can be used for gene therapy or in various. The polynucleotides of the invention and antibodies encoded by them may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate polypeptide expression. The products of the invention may also be used to identify modulators of expression and activity and to down regulate expression and activity. The antibodies of the invention may also be used as diagnostic agents for detecting the presence of polypeptides in samples. This sequence represents a homologue of a polypeptide described in the disclosure of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 TAVYGLVVAGSVLVLGALIGDMVDKNARLKVAQTSLVVQNVSVILCGILLMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
-ITTGYAYTQGLSGSILSILM 346
                                                                                                                   393
                                                                                                                                                                           384 ------SYNWNNGNCSFYLATSKWWFGSDRSDLRIGTAFLFDLVCDLCIHAWKP 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This invention describes novel polynucleotides and polypeptides isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     oŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAVYGLVVAGSVLVLGAIIGDMVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKNEL
                                                    335 SYYNQPVFLGWHGSCFPLY-----DCPGLXLHHHRVRLHSGTEWFHPQYFDGSI----
                                                                                                                      ---GLVRTGLISGLAQLSCLI--LCVISVFM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acids having the sequences of clones isolated from libraries different human tissues, useful in recombinant DNA methodologies -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cell structure and motility-associated DKFZphutel_24j6 homologue #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22; Length 319;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; gene therapy; vaccine; disease treatment; detection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1470.5; DB 22; .....
Pred. No. 1e-131;
.....rrhes 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example III; Page 538; 1095pp; English.
   SYYNQPVFLAGMGLAF-LYMTVLGFDC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GEHU-) GERMAN HUMAN GENOME PROJECT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABU52923 standard; Protein; 319 AA.
                                                                                                                         GASAITGIMGTVAFTWLRRKC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99US-0149499,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-AUG-2000; 2000WO-IB01496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 90.3
Matches 288; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-327840/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        319 AA;
```

```
240
                                                                                    300
                                                                                                         300
                                           240
                                                      241 VEESELKQLTSPKDTEPKPLEGTHLMGEKDSNIRELECEQEPTCASQIAEPFRTFRDGWV
LIMYHGWVLTSCYILLITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
             LNMYHGWVLTVCYILIITIANIANLASTATAITIQRDWIVVVAGENRSRLADMNATIRRI
                                         DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                  EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the
                                                                                                                                                                                                                                                                                         Human; primer; detection; diagnosis; antisense therapy; gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yamamoto J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention describes primer sets for synthesising 5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saito K,
, Otsuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8; SEQ ID 12959; 2537pp + CD ROM; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hayashi K, S
A, Nagai K,
                                                                                                                                                                                                                                                                     Human protein sequence SEQ ID NO:12959.
                                                                                                                                                                                                     AAB93563 standard; Protein; 167 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nishikawa T,
T, Wakamatsu
                                                                                                                             SYYNOPVFLAGMGLAF-LY 318
                                                                                                                                                 SÝÝNQPVFLGWHGPGFPLY 319
                                                                                                                                                                                                                                                                                                                                                                                                29-JUL-1999; 99JP-0248036.
27-AUG-1999; 99JP-0300253.
11-JAN-2000; 2000JP-0118776.
02-MAY-2000; 2000JP-0183767.
09-JUN-2000; 2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                            28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sugiyama T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         full-length cDNAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ŧ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Isogai
                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                   EP1074617-A2
                                                                                                                                                                                                                                                                                                                                                        07-FEB-2001.
                                                                                                                                                                                                                                               26-JUN-2001
121
                   121
                                                              181
                                                                                  241
                                                                                                                                                301
                                                                                                                                                                                                                          AAB93563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s,
                                         181
                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ota T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ishii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                 RESULT 15
                   셤
                                                         g
                                                                                 ò
                                                                                                     g
                                                                                                                                                                                                     ð
                                                                                                                             ò
```

sequence and an oligonucleofide comprising a sequence complementary to a polymucleotide which comprises a 3'-end sequence, where the oligonucleotide comprises at least 15 nucleotides and the combination of the 5'-end sequence is selected from those defined in the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polymucleotides, particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by

full length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dr primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end

```
ö
                                                                                                                                                                                                                         325
                                                                                                                                                                                                                                                                                          385
the full-length cDNAs. The primers allow optaining or the thing containing or the AAH13628 and AAH13633 to AAH13642 expressed methods. AAH13645 to AAH13629 and AAH13633 to AAH18742 represent human CDNA sequences; AAB92446 to AAH13633 represent human amino acid sequences; and AAH13629 to AAH13632 represent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                               61 CITIGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLI
                                                                                                                                                                                                                       266 MGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVLGFD
                                                                                                                                                                                                                                          1 MGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVLGFD
                                                                                                                                                                                                                                                                                          CITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLI
                                                                                                                                                                                       Gaps
                                                                                                                                                                                       ó
                                                                                                                                                                                                                                                                                                                                                                           LCVISVEMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIHV 167
                                                                                                                                                       Length 167;
                                                                                                                                                                                                                                                                                                                                                          LCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPITKIPEITTEIYM 432
                                                                                                                                                                                       Indels
                                                                                                                                                                                     ..
                                                                                                                                                      Score 859; DB 22;
Pred. No. 1.1e-73;
2; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                              completed: November 5, 2003, 18:32:18
                                                                                                                                                    29.3%;
llarity 98.8%;
Conservative
                                                                                                                                                                    Local Similarity
ses 165; Conserv
                                                                                                                      167 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                52 secs
                                                                                                                        Sequence
                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                        326
                                                                                                                                                                                                                                                                                                                                                           386
                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                              Search com
 8888888888
                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                         à
```

This Page Blank (uspto)

protein search, using sw model OM protein -

November 5, 2003, 18:30:57; Search time 23 Seconds (without alignments) 1050.413 Million cell updates/sec Run on:

US-09-715-927-6 2929 Title: Perfect score:

1 MTRAGDHNRQRGCCGSLADY.....ACGPDAKEVRKENQANTSVV 571 Sequence:

**BLOSUM62** Scoring table:

328717 seqs, 42310858 residues Gapop 10.0 , Gapext 0.5 Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Issued Patents AA:\*

(cgn2\_6/ptodata/2/iaa/5A\_COMB.pep:\*
(cgn2\_6/ptodata/2/iaa/5B\_COMB.pep:\*
(cgn2\_6/ptodata/2/iaa/6A\_COMB.pep:\*
(cgn2\_6/ptodata/2/iaa/6B\_COMB.pep:\*
(cgn2\_6/ptodata/2/iaa/PcTuS\_COMB.pep:\*
(cgn2\_6/ptodata/2/iaa/PcTuS\_COMB.pep:\* 4.09 Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

																									•			
, r	Description	Sequence 460, App	12, 7	12,	330	4392,	Sequence 4610, Ap	19, 4	ř	~			Sequence 5222, Ap		Sequence 4, Appli	4	17	9	28	2974	27018			Sequence 5370, Ap		~	8	55
SUMMARIES	ΩΙ	.US-09-149-476-460	US-08-928-692-12	US-09-339-972-12	US-09-252-991A-33032	US-09-328-352-4392	US-09-134-001C-4610	US-08-118-270-19	PCT-US93-08528-19	US-08-595-553A-2	US-09-640-198D-4	US-09-134-001C-3299	US-09-328-352-5222	US-09-031-392-4	US-09-299-549-4	US-09-610-417-4	US-09-328-314-17	US-08-748-485-6	US-09-291-922-28	US-09-134-001C-2974	US-09-252-991A-27018	US-09-236-080-6	US-09-252-991A-27790	US-09-134-001C-5370	US-08-194-338-4	US-09-236-080-2	US-09-336-643A-83	US-09-134-001C-5502
	DB	4	N	4	4	4	4	Н	ហ	4	4	4	4	N	m	4	4	0	4	4	4	m	4	4	Н	ო	4	4
	Match Length	3.83	524	524	305	429	470	330	330	618	618	411	465	534	534	534	471	358	529	553	966	411	7,60	499	461	411	4:11	366
* Query	Match	61.1	4.2	4.2	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.6	•		•	3.5	3.5	3.5	3.5	٠	3.4	3.4		3.4	3.4	3.3
	Score	1789	123.5	123.5	112	110	109.5	108	108	108	108	107	107	104	104	104	103.5	0	102.5	102	101.5	100.5	100.5	100	99.5	98.5	98.5	86
Result	No.	ч	<b>~</b> 1	m	4	S	9	7	ω	6	10	11	12	13	14	15	16	. 17	18	19	20	21	22	23	24	25	26	27

	3227, Ap	3105, Ap	26031. A	33, Appl	33, Appl	33, Appl	20611, A	4, Appli	6, Appli	6, Appli	6, Appli	17	5530, Ap	7	8, Appli	61	17805, Å	
	Sequence 3227,	Sequence 3105,	Sequence 26031.	Sequence	Sequence	Sequence	Sequence	Seguence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
	US-09-134-001C-3227	US-09-134-001C-3105	US-09-252-991A-26031	US-08-629-291A-33	US-08-658-335B-33	US-09-406-640-33	US-09-252-991A-20611	US-08-103-170-4	US-08-103-170-6	US-08-882-704A-6	US-09-151-957-6	US-09-266-965-17	US-09-107-532A-5530	US-09-376-330-2	US-09-144-914-8	US-09-107-532A-6160	US-09-252-991A-17805	US-09-134-001C-4353
•	4	4	4	7	7	4	4	7	7	7	4	4	4	4	4	4	4	4
•	443	808	596	808	808	808	1033	359	359	457	457	484	427	1527	370	480	1421	398
•	n n	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5	3.2
ć	D N	98	97.5	97.5	97.5	97.5	97.5	97	97	97	97	97	96	96	95.5	95.5	95	94.5
•	27	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

## ALIGNMENTS

```
APPLICANT: Rosen et al.
ITILE OF INVENTION: 186 Human Secreted proteins
FILE REFERENCE: PZ002D1
FILE REFERENCE: PZ002D1
CURRENT APPLICATION NUMBER: US/09/149,476
CURRENT FILING DATE: 1998-09-08
EARLIER FILING DATE: 1998-03-06
EARLIER FILING DATE: 1998-03-06
EARLIER APPLICATION NUMBER: 60/040,162
EARLIER FILING DATE: 1997-03-07
EARLIER FILING DATE: 1997-03-07
                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/040,333
FILING DATE: 1997-03-07
APPLICATION NUMBER: 60/038,621
                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 1997-03-07
APPLICATION NUMBER: 60/040,626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/047,502
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EARLIER APPLICATION NUMBER: 60/047,583
EARLIER FILING DATE: 1997-05-23
EARLIER APPLICATION NUMBER: 60/047,617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EARLIER FILING DATE: 1997-05-23
EARLIER APPLICATION NUMBER: 60/047,584
EARLIER FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/040,336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/040,163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/047,600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60/047,615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/047,633
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/047,618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EARLIER FILING DATE: 1997-05-23
EARLIER APPLICATION NUMBER: 60/047,503
                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/040,334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60/047,597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60/047,592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/047,581
Sequence 460, Application US/09149476
Patent No. 6420526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 1997-03-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1997-03-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 1997-03-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                1997-03-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EARLIER I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EARLIER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EARLIER
```

R APPLICATION NUMBER: 60/047,582
R FILING DATE: 1997-05-23
R PAPLICATION NUMBER: 60/047,596
R FILING DATE: 1997-05-23
R APPLICATION NUMBER: 60/047,612
R APPLICATION NUMBER: 60/047,612
R APPLICATION NUMBER: 60/047,612
R APPLICATION NUMBER: 60/047,612
R APPLICATION NUMBER: 60/047,612 R APPLICATION NUMBER: 60/056,886 R FILING DATE: 1997-08-22 R APPLICATION NUMBER: 60/056,877 R FILING DATE: 1997-08-22 R APPLICATION NUMBER: 60/056,889 R FILING DATE: 1997-08-22 R APPLICATION NUMBER: 60/047,492 R FILING DATE: 1997-05-23 R APPLICATION NUMBER: 60/047,598 R FILING DATE: 1997-05-23 R APPLICATION NUMBER: 60/047,613 R FILING DATE: 1997-05-23 PPLICATION NUMBER: 60/043,672 TLING DATE: 1997-04-11 . PPLICATION NUMBER: 60/043,315 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,878 FILING DATE: 1997-08-22 ILING DATE: 1997-08-22 PPLICATION NUMBER: 60/056,888 TILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,879 ILING DATE: 1997-08-22 PPLICATION NUMBER: 60/047,587 ILING DATE: 1997-05-23 APPLICATION NUMBER: 60/047,601 FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/043,580 FILING DATE: 1997-04-11 PPLICATION NUMBER: 60/043,568 [LING DATE: 1997-04-11] PPLICATION NUMBER: 60/043,314 ILLING DATE: 1997-04-11 ILING DATE: 1997-04-11 FILING DATE: 1997-04-11 APPLICATION NUMBER: 60/043,669 APPLICATION NUMBER: 60/043,312 FILING DATE: 1997-04-11 APPLICATION NUMBER: 60/043,313 ILING DATE: 1997-04-11 PPLICATION NUMBER: 60/048,974 ILING DATE: 1997-06-06 APPLICATION NUMBER: 60/056,893 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,630 APPLICATION NUMBER: 60/056,662 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,872 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,882 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/043,311 ILING DATE: 1997-04-11 PPLICATION NUMBER: 60/043,671 ILING DATE: 1997-04-11 PPLICATION NUMBER: 60/043,674 APPLICATION NUMBER: 60/056,637 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,903 APPLICATION NUMBER: 60/056,880 LING DATE: 1997-04-11 LING DATE: 1997-05-2 LING DATE: 1997-04-1 BARLIER

R FILING DATE: 1997-05-23
R APPLICATION NUMBER: 60/043,670
R FILING DATE: 1997-04-11
R APPLICATION NUMBER: 60/056,632
R FILING DATE: 1997-08-22
R APPLICATION NUMBER: 60/056,664
R APPLICATION NUMBER: 60/056,664
R APPLICATION NUMBER: 60/056,876
R FILING DATE: 1997-08-22 R FILING DATE: 1997-08-22 R APPLICATION NUMBER: 60/056,636 R FILING DATE: 1997-08-22 A PPLICATION NUMBER: 60/056,874 R FILING DATE: 1997-08-22 R APPLICATION NUMBER: 60/056,910 R FILING DATE: 1997-05-23

A APPLICATION NUMBER: 60/047,594

R FILING DATE: 1997-05-23

R APPLICATION NUMBER: 60/047,589

R FILING DATE: 1997-05-23

R APPLICATION NUMBER: 60/047,589 FILING DATE: 1997-06-06
APPLICATION NUMBER: 60/057,650
FILING DATE: 1997-09-05
APPLICATION NUMBER: 60/056,884
FILING DATE: 1997-08-22 FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/047,599 FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/047,588 FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/047,586 FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/056,894 ILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,911 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,864 FILING DATE: 1997-08-22 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,845 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,892 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/057,761 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/047,595 FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/047,585 APPLICATION NUMBER: 60/047,590 FILING DATE: 1997-05-23 APPLICATION NUMBER: 60/043,578 APPLICATION NUMBER: 60/043,576 FILING DATE: 1997-04-11 APPLICATION NUMBER: 60/056,881 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,909 FILING DATE: 1997-08-22 APPLICATION NUMBER: 60/056,875 FILING DATE: 1997-08-22
APPLICATION UNDBER: 60/056,862
ELING DATE: 1997-08-22
APPLICATION NUMBER: 60/056,887 APPLICATION NUMBER: 60/056,631 APPLICATION NUMBER: 60/047,614 APPLICATION NUMBER: 60/047,501 APPLICATION NUMBER: 60/048,964 LING DATE: 1997-04-11 EARLIER SARLIER SARLIER EARLIER SARLIER

150

183

23

Gaps

210

213

```
----WNL-----VSMCVEYVLLWKVYQKTPALAVKAGLKEETTELKQLNLHKDTEPKPL 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  214 NYDLWHILLGLSGVRAILQSLILFFCPESPRYLYIKL---DEEVKAKQ-SLKR----- 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      261 EGTHLMGVKD--SNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGM-GLAFL 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----LRGYDDVTKDINEMRKEREEASSEQKVSIIQLFTN---SSYRQPILVALMLHVAQQ 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               318 YMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISG 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----VSLL 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----PRPAALAIAAFSNWTCNFIVALCFQYIADFCGPYVFFL 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: No. 63230020 No. 6323002disk of No. 6323002th America, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  374 SGMFVCAIFMSVGLVLLNKFSWMSYVSMIAIF-----LFVSFFE-----IGP
                                                                                                                                                                                                                                                                                           41 MWHFAVSVFLV----ELYGNSL--LLTAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQ
                                                                                                                                                                                                                                                                                                                                                                    94 TSLVV---QNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLASTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 151 AITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         378 LAQLSCLI-------LCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                          -----IGEIAPTA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ------SQIIGLEFILG
                                                                                                                                                                                                                                                         Indels 169;
                                                                                                                                                                                                                   Length 524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Brody, Howard
APPLICANT: Yaver, Deborah S.
APPLICANT: Yaver, Deborah S.
APPLICANT: Lamsa, Michael
APPLICANT: Hansen, Kin
TITLE OF INVENTION: Methods for Modifying the Production
TITLE OF INVENTION: a Polypeptide
CORRESPONDENCE: 80
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                        150 SHILIIAGRSISGLYCGLI-----SGLVPMY----
                                                                                                                                                                                                                4.2%; Score 123.5; DB 2; 20.3%; Pred. No. 0.00084; tive 69; Mismatches 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 TKIPEITTEIYMSNGSNSANIVPETSPESVPIIS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 12, Application US/09339972; Patent No. 6323002; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              405 Lexington Avenue
                                                                                                                                    TOPOLOGY: linear
MOLECULE TYPE: No. 5958727e
                       TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 524 amino acids
                                                                                                                                                                                                        Query Match
Best Local Similarity 20.3%
Matches 99; Conservative
       212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         416 GPIPWFMVAEFFSQG-
                                                                                                                      single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 10174
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ||||: |
FAGVLLA 475
                                                                                                 TYPE: amino acid STRANDEDNESS: sin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: New York
STATE: NY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               459 FAGVIAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
     TELEPHONE:
                                                                                                                                                              , MOLECULE TYI
US-08-928-692-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
US-09-339-972-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ∂
                                                                                                                                                                              ö
                                                                                                                                                                                                                 249
                                                                                                                                                                                                                                                                                                             61 NIHKOTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                 429
                                                                                                                                                                                                                                                                                       NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 309
                                                                                                                                                                                                                                                                                                                                                                                                AGMGLAFLYMTVLGFDCITTGYAYTQGLSGFHPQYFDGSISYNWNNGNCSFYLATSKMWF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIINGVONSMNYLLDLIHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK 360
                                                                                                                                                                                                                                                                                                                                                              AGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGL 369
                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No. 59587270 No. 5958727disk of No. 5958727th America, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 GSAGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE
                                                                                                                                                                                                            190 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQL
                                                                                                                                                                                                                                       1 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKOL
                                                                                                                                                                                                                                                                                                                                                                                                                                         370 VRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK
                                                                                                                                                                              Gaps
                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: A Polypeptide
TITLE OF INVENTION: A Polypeptide
NUMBER OF SEQUENCES: 80
CORRESPONDENCE ADDRESS:
ADDRESSEE: No. 59587270 No. 5958727disk of No. 5958727th P
STREET: A65 Lexington Avenue
CITY: New York
                                                                                                                                      Length 383;
                                                                                                                                                                          Indels
                                                                                                                                  61.1%; Score 1789; DB 4;
llarity 92.4%; Pred. No. 8.8e-175;
Conservative 3; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Lambiris, Elias J
REGISTRATION NUMBER: 33,728
REFERENCE/DOCKET NUMBER: 4944.200-US
TELECOMMUNICATION INFORMATION:
EARLIER APPLICATION NUMBER: 60/057,669
EARLIER FILING DATE: 1997-09-05
EARLIER APPLICATION NUMBER: 60/049,610
EARLIER FILING DATE: 1997-06-13
EARLIER APPLICATION NUMBER: 60/061,060
EARLIER FILING DATE: 1997-10-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CUCRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/928,692
FILING DATE: 12-SEPT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NO. 59587270 NO. 55
CITY: 405 Lexington Avenue
CITY: New York
STATE: NY
COUNTRY: HG?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 12, Application US/08928692
Patent No. 5958727
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Brody, Howard
APPLICANT: Yaver, Deborah S.
APPLICANT: Lamsa, Michael
APPLICANT: Hansen, Kim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATER!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                      Best Local Sim
Matches 353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
US-08-928-692-12
                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                                                                310
                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                  Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                          <u>අ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

420

415

us-09-715-927-6.rai

```
US-05128-352-4392

Sequence 4392, Application US/09328352

Sequence 4392, Application US/09328352

Patent No. 6562958

GENERAL INPORMATION:

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER

TITLE OF INVENTION: NUMBER: US/09/328,352

CURRENT APPLICATION NUMBER: US/09/328,352

CURRENT FILING DATE: 1999-06-04

NUMBER OF SEQ ID NOS: 8252

LENGTH: 429
RELATING TO PSEUDOMONAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116 LQNYVQVAQGPRQQGI---------PTLLDGALKFH---VGDGFVQLTYTK 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            261 EGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMT 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         321 VLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQ 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64 LQNFPLLILGTLLFTV-----LVTCTYGWVIER--IAYKPLRNSTRLAPLISAIGMSLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155 QRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFIS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 210 -----GWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKPL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----ISY----VFVIGAAMAALAGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48 VFLVELYGNSLLLTAVYGLVVAGSVLVLGAL----IGDWVDKNARLKVAQTSLV---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98 VQNVSVILCGIILMMVPLHKHELLTMYHGWVLTSCYILIITIANIANLASTATAI---TI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155 LFILIASLIĠMAVLTYVIRŸTKĽGRMCRAŤ------QQDRKM-------
       NUCLEIC ACID AND AMINO ACID SEQUENCES RELAT AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                    3.8%; Score 112; DB 4; Length 305; 18.3%; Pred. No. 0.0053;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 3.8%; Score 110; DB 4; Length 42 Best Local Similarity 19.8%; Pred. No. 0.015; Matches 91; Conservative 78; Mismatches 158; Indels
                                            CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILIDE DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 33032
                                                                                                                                                                                                                                                                                                                                                                                                                                  65; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---LSCLILCVISVFMP 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               266 AQFSGMVNTDYKDVFAFSLĽVLÍLIFRP 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Acinetobacter baumannii
                                                                                                                                                                                                                                                                                                                  ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     191 --ASILGINTDRV-----
                                                                                                                                                                                                                                                                                                                                                                                                          Best_Local Similarity 18.3
Matches 71; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      381 -----
                                                                                                                                                                                                                                                                                                                                        US-09-252-991A-33032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-328-352-4392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96 LWSLSVSSFAVGGMTASFFGGWLGDTLGRIKAMLVANILSLVGALLMGF-----SKLGP 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94 TSLVV---QNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLASTAT 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SHILIIAGRSISGLYCGLI-----SGLVPMY------IGEIAPTA- 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             151 AITIQRDWIVVVAGEDRSKLANMNAȚIRRIDQLȚNILAPMAVGQIMTFGSPVIGCGFISG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----WNL-----VSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPL 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421 TKIPEITTEIYMSNGSNSANIVPETSPESVPIIS--------VSLL 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   416 GPIPWFMVAEFFSQG-----PRPAALAIAAFSNWTCNFIVALCFQYIADFCGPYVFFL 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   214 NYDLWHILLGLSGVRAILQSLLLFFCPESPRYLYIKL---DEBVKAKQ-SLKR----- 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    261 EGTHLMGVKD--SNIHELEHEQEPTCASOMAEPFRIFRDGWVSYYNOPVFLAGM-GLAFL 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----LRGYDDVTKDINEMRKEREEASSEQKVSIIQLFTN---SSYRQPILVALMLHVAQQ 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISG 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 MWHFAVSVFLV----ELYGNSL--LLTAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------soliglefilg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --LCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         69; Mismatches 150; Indels 169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           374 SGMFVCAIFMSVGLVLLNKFSWMSYVSMIAIF-----LFVSFFE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 123.5; DB 4;
Pred. No. 0.00084;
                                                   SOFTWARE: FastSEQ for Windows Version 2.0
                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Lamblris, Elias J
REGISTRATION NUMBER: 33,728
REFERENCE/DOCKET NUMBER: 4944.200-US
                                                               CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/339,972
FILING DATE:
CLASSIFICATION:
                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/928,692
FILING DATE:
                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION: TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 20.3%;
Matches 99; Conservative 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: No. 6323002e
         IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                           : 524 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FAGVIAA 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            378 LAQLSCLI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
US-09-252-991A-33032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-339-972-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

23;

62

20 YLTSAKFLLY--LGHS---LSTWGDRMWHFAVSVFLVELYGNSLLLTA-

; Sequence 33032, Application US/09252991A ; Patent No. 6551795 ; GRNEATION: APPLICANT: Marc J. Rubenfield et al.

```
445
      ---GMGLAFLYMTVLGFDCIT 328
                                                                                     329 TGYAYTQGLSGSILSILMGASA--ITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLIL 386
                                                                                                              446 SPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESERGIINGVQNSMNYLLDL 505
                                                                                                                                                                                                                                                                                             --- 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60 LTAVYGLV----VAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFL 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                               387 CVISVEMPGSPLDLSVSPFEDIRSRFIQGESITP-TKIPEITTEIYMSNGSNSANIVPET
                                            ----SDVTSPHNSWTDLFKPRYIKRIILATAISTLQGMQYYGVG---LYIPIIA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Murphy, Randall B.
APPLICANT: Schuster, David I.
TITLE OF INVENTION: POLYPEPTIDES OF G-COUPLED PROTEIN
TITLE OF INVENTION: RECEPTORS, AND COMPOSITIONS AND METHODS THEREOF
NUMBER OF SEQUENCES: 348
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3.7%; Score 108; DB 1; Length 330; ilarity 24.4%; Pred. No. 0.016; Conservative 39; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: BROWDY AND NEIMARK
STREET: 419 Seventh Street, N.W., Suite 300
                                                                                                                                                                                                                                                                                           416 VSRTGSIIGTFVF--PIILAAVGLTN------
                                                                                                                                                                                                                                                                                                                                                        SOG LHFIMVILAPNPEAFGLLVLISVSFVAMG-HI
      281 EPTCASQMAEPFRTFRDGWVSYYNQPVFLA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/118,270
FILING DATE: 09-68P-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/943,236
FILING DATE: 10-5EP-192
ATTORNEY/AGENT INFORMATION:
NAME: TOWNSER: 34,033
REGISTRATION NUMBER: 34,033
REGISTRATION NUMBER: 34,033
REPENCE/DOCKET NUMBER: MURPHY=2A
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-628-5197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MURPHY=2A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Sequence 19, Application US/08118270; Patent No. 5508384; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 330 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 248633
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          202-737-3528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM:
SOFTWARE: Patentl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: D
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-118-270-19
                                            260
                                                                                                                             307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                        g
                                                                                                                                                                                                          셤
                                                                                ò
                                                                                                                  g
                                                                                                                                                         ò
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4610, Application US/09134001C

Sequence 4610, Application US/09134001C

SEQUENCES 1810 SEQUENCES RELATING TO STAPHYLOCOCCUS

TITLE OF INVENTION: BPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS

TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS

TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS

CURRENT APPLICATION NUMBER: US/09/134,001C

CURRENT APPLICATION NUMBER: US 60/064,964

PRIOR APPLICATION NUMBER: US 60/064,964

PRIOR APPLICATION NUMBER: US 60/055,779

PRIOR FILING DATE: 1997-01-08

PRIOR FILING DATE: 1997-08-14
                                                                  63 VPMSHEFGWGQHVFSLAIAMQNLIWGAIQPFTGAIADKYG-----SKVVVTVGGLLYT 115
                                                                                                                                                                                                                                 264
                                                                                                                                                                                                                                                                                                                                                                                                 265 VHLPG-----YLIDHGFDATTGTVFLALVGLENIVGTYGAGWLGDRFSKPKLLMALYGS 318
                                                                                                                       108 I-ILMMVFLHKHELLTMYHGWVLTSCYILITTANIANLASTATAITIQRDWIVVVAGED 166
                                                                                                                                                                                                                                                                                                                                                                       THIMGVKDSNIHELEHEQEPTCAS-----QMAEPFRTFRDGWV-SYYNQPVFLAGM--- 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          319 RGIAIIAFLLLPLSTYTV-YAFGIIMGLLWLSTVPLTNGIVANMFGVKYLSMLSGIVFFT 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---KNARLKVAQTSLVVQNVSVILCGIILMMVFL 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45 LILGTIFLDAYDITILGTMTDQLTQQFHLSPATLSIVMTSLPIGALFGALLGGTLAYQFG 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               116 HIGHELLTMYHGWVLTSCYILLITIANI-ANLASTATAITIQRDWIVVVAGEDR----- 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | : | :| :| :| | | 105 RKR------ILSIALLTLTVTSLGAALAPNVIILIICRCIMGFAIGMDSPVAFTFI 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                168 SKLANMNATIRRID--QLTNILAPMAVGQIMTFGSPVIGCG-----FISGWNLVSMCVEY 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQ 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 YIDIIRYIFYNDLSHSYNFLLTMTKTSHQFSQSLIYM-LIGSAIILALSLGVRHGFGLYL 62
                                                                                                                                                  ----VYGLVVAGSVLVLGAI----IGDWVDKNARLKVAQTSLVVQNVSVILCG
                                                                                                                                                                                                                                                                                                                210 P--LAWML--KGPSNQTPKAIAQPQLIFKQV-LHIARKHKPFWWLALGFLVCGFQVVFLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWN-----LVSMCV
                                                                                                                                                                                                                                                                                      BYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKP------LEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                      313 -GLAFLYMTVLGFDCITTGYAY------TQGLSGSILSILMGASAITGIMGTVAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85; Mismatches 190; Indels 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 470;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362 WLRRKCGLVRTGLISGL----AQLSCLILCVISVFMPG 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---HOVGSFFGGWLGGVNHDLTGNYNAIWLCSIALSILG 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.7%; Score 109.5; DB 4;
19.5%; Pred. No. 0.019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: PRT
; ORGANISM: Staphylococcus epidermidis
US-09-134-001C-4610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 19.5:
Matches 100; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73 LVLGAIIGDWVD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 6
US-09-134-001C-4610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 4610
LENGTH: 470
                                        63
                                                                                                                                                                                                        167
                                                                                                                                                                                                                                                  162
                                                                                                                                                                                                                                                                                      219
                                                                                                                                                                                                                                                                                                                                                                       263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 221
                                                                              셤
                                                                                                                  ò
                                                                                                                                                         qq
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

원

셤 ò

ò g

```
270 VACHTEGKAKLALL------VNQL------GLFLIVASAAC-CG------ 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74 VLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWV-LTSC 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    210 VILLGGPRNVLSLAQNHSRINLMDFDPDPRSRYTFWTFIVGGTLVWLSMYGVNQAQVQRY 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220 YVLLWKVYQK--TPALAVKAGLKEEFTELKQLNLHKDTEPKP------LEGTH 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     165 ----EDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14 CGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.7%; Score 108; DB 4; Length 618; 19.1%; Pred. No. 0.042; tive 71; Mismatches 160; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133 YILIITIANIANLASTATAITIQ------RDWIVVVAG-----
                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: NANCY CARRASCO, ET AL.
TITLE OF INVENTION: THYROID SODIUM/IODIDE SYMPORTER AND
TITLE OF INVENTION: NUCLEIC ACID ENCODING SAME
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSE:
ADDRESSE:
ADSTER, ROTHSTEIN & EBENSTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 170 STGIICTLYTTVGGMKAVVWTD--VFQVVVMLVGF------
                                                                                                                                                                                                                                                                                                     STREET: 90 PARK AVENUE
CITY: NEW YORK
STATE: NEW YORK
COUNTRY: U.S.A.
ZIP: 10016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SODIUM/IODIDE SYMPORTER
                           168 FFAPCLIYLLVYARIYRVAKRRTRTLSEK 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPOTER READABLE FORM:
MEDIUM TYPE: 3.5 INCH 1.44 Mb STORAGE
MEDIUM TYPE: DISKETTE
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: MS-DOS
220 -----YVLLW-KVY----QKTPALAVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (212) 697-5995
TELEFAX: (212) 286-0854 or 286-0082
TELEX: TWX 710-581-4766
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/595,553A
FILING DATE: FEBRUARY 1, 1996
ATTORNEY/AGENT INFORMATION:
NAME: CRAIG J. ARNOLD.
REGISTRATION NUMBER: 34,287
REFERENCE/DOCKET NUMBER: 96700/393
                                                                                                                                            US-08-595-553A-2; Sequence 2, Application US/08595553A; Patent No. 6391579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: ASCII
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 19.1
Matches 103, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGI..
MOLECULE TYPE:
DESCRIPTION: PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: RAT INDIVIDUAL ISOLATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYPOTHETICAL: )
ORIGINAL SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-595-553A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                        g
  ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                       59 LANEIMYWYFGQVWCGVYLAIDVLFCTSSIVHLC----AISLDRYWSVTQAVE----YN 109
                                                                                                                                                   116 HKHELLTMYHGWVLTSCYILIIII----ANIANLASTATAITIQRDWIVVVAGEDRSKLAN 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           116 HKHELLTMYHGWVLTSCYILIIII----ANIANLASTATAITIORDWIVVVAGEDRSKLAN 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             173 MNATIRRIDQLTNILAPMAVGQIMTF------GSPVIGCGF-ISGWNLVSMCVE- 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 LAAVVGFLIVFTVVGNVLVVIAVL----TSRALRAPQNLFLVSIASADILVATLVMPFS 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59 LANEIMYMYFGQVWCGVYLAIDVLFCTSSIVHLC----AISLDRYWSVTQAVE----YN
                                                                                                                     MNATIRRIDQLTNILAPMAVGQIMTF -----GSPVIGCGF-ISGWNLVSMCVE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 LTAVYGLV----VAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFL
                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: New York University
TITLE OF INVENTION: POLYPEPTIDES OF G-COUPLED PROTEIN
TITLE OF INVENTION: POLYPEPTIDES OF G-COUPLED PROTEIN
TITLE OF INVENTION: RECEPTORS, AND COMPOSITIONS AND METHODS THEREOF
NUMBER OF SEQUENCES:
ADDRESSE: BROWDY AND NEIMARK
STREET: 419 Seventh Street, N.W., Suite 300
CITY: Washington
STATE: D.C.
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 3.7%; Score 108; DB 5; Length 330; Best Local Similarity 24.4%; Pred. No. 0.016; Matches 51; Conservative 39; Mismatches 71; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/08528
FILING DATE: 09-SEP-1993
PROR APPLICATION NUMBER: US 07/943,236
FILING DATE: 10-SEP-1992
ATPORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                              168 FFAPCLIYLLVYARIYRVAKRRTRTLSEK 196
                                                                                                                                                                                                                  220 -----YVLLW-KVY----QKTPALAVK 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Townsend, Kevin G.
REGISTRATION NUMBER: 34,033
REFREENCE/DOCKET NUMBER: MURPHY=2 PCT
TELECOMUNICATION INFORMATION:
TELEPHONE: 202-628-5197
TELEFAX: 202-737-3528
                                                                                                                                                                                                                                                                                                                                                                                  Sequence 19, Application PC/TUS9308528 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 330 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEX: 248633
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 20004
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                              1-US93-08528-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PCT-US93-08528-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                     173
```

27;

169

164

원

g ò

ò

Qy       372 TGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEI	RESULT 11  US-09-134-001C-3299, Application US/09134001C  Sequence 3299, Application US/09134001C  Patent No. 6380370  APPLICANT: Lynn Doucette-Stamm et al  TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATINC  TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS  TITLE DEPENDENCE CANCACTOR	CURRENT APPLICATION NUMBER: US/09/134,001C	Query Match  3.7%; Score 107; DB 4; Length 411; Best Local Similarity 19.7%; Pred. No. 0.028; Matches 96; Conservative 70; Mismatches 167; Indels 154; Qy 17 LADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVPLVELYGNSL Db 19 MAKYFFSSSFLLFLGNWIGQVGLNWFVLTTYHNAVYLGLVNFCRLIPI Ov 64 YGLVVAGSVLVLGATIGDWUNKNARH:KVAONSVIT.CGITIMMAVFLHKH	- п	QY 180IDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYULUKVV	292 292 230 349	Db 270 CAIGGIVATIVLPSILKHLSTVKMYYLSSILFGIALLGIIIHHLVWPICITLIG  Qy 405 FEDIRSRFIQGESITPTKIPEITTEIYMSNGSNSANIVPETSP  : :       : :     : :     : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :     : : :       : : :       : : :       : : :       : : :       : : :     : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :       : : :     : : :     : : :     : : :     : : :     : : :     : : :     : : :     : : :     : : :     : : :     : : :   : :   : :     : : :     : : :     : : :     : : :     : : :   : : :   : : :   : :   : :   : :   : :   : :   : :   : :   : :   : : :   : : :   : : :   : : :   : :   : : :   : :   : : :   : :   : :   : : :   : :   : : :   : :   : : : :   : : :   : : :   : : :   : : :   : : :   : : :   : : : :   : : : :   : : :   : : : :   : : : :   : : : :   : : : : : : : : :   : : : : :   : : : : :   : : : : : :   : : : : : : :   : : : : : : :   : : : : : : :   : : : : : :   : : : : :   : : : : : :   : : : : :   : : : : :   : : : : :   : : : : :   : : : : : :   : : : : :   : : : : :   : : : : :   : : : : :   : : : : : : : : : :   :	
Db 301IVMFVYYKDCDPLLTGRISAPDQYMPLLVLDIFEDLPGVPGLFLACAYSGTLSTASTS 358  QY 265 LMGVKDSNIHELEHEQEPTCASQWAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVLGF 324  Db 359 INAMAAVTVEDLIKPRMFGLAPRKLVFIS-KGLSFIYGS 396  QY 325 DCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVR 371	Qy         372 TGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIY 431           :     :     :     :       :	RESULT 10 US-09-640-198D-4 Sequence 4, Application US/09640198D Fatent No. 6586411 FAPELICANT: Russell, Stephen APPLICANT: Ray Whye, Peng ITILE OF INVENTION: System for Monitoring the Location of ITILE OF INVENTION: 1 Transgenes FILE REPERENCE: 07039-295001 CURRENT APPLICANTON UNDER: US/09/640,198D	PRIOR APPLICATION NUMBER: US 60/149,168  PRIOR FILING DATE: 1999-08-17  NUMBER OF SEQ ID NOS: 34  SEQ ID NO 4  LENGTH: 618  TYPE: PRT  TYPE: PRT  TYPE: PRT  SOGANISM: Rattus sp.  US-09-640-1980-4	Query Match 3.7%; Score 108; DB Best Local Similarity 19.1%; Pred. No. 0.042 Matches 103; Conservative 71; Mismatches 14 CGSLADYLTSAKFLLYLGHSLSTWGDRWHFAVSV   :   ::	L-QYLVATMLYTGIVIYAPAL ISDWYDKNARLKVAQTSLVVQNVSVILGGIILMMVFLHKH   SWYYVGGMKAVVWTDVFQVVVMLVGF	210 VILLGGPRNVLSLAQNHSRINLMDFDPDFRSRYTFWTFIVGGTLVWLSMYGVNQAQVQRY 165EDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVE 270 VACHTEGKAKLALLVNQLGLFLIVASAAC-CG	QY         220 YULLWKYYQKTPALAVKAGLKEEETELKQLNLHKDTEPKPLEGTH 264           ::	Qy 325 DCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVR 371

ING TO STAPHYLOCOCCUS PEITTEIY 431 | : AGCINDSV 488 Gaps 20; HKHELLTM 123 ||| ----LLT- 104 WKVYQKTP 231 | : | QKEGKALP 213 PLDLSVSP 404 : | | LIGL-FSQ 328 --LLLTAV 63 :|| :| IPILLLSV 71 SPESVPI 452 : : : FTIMGIST 388 MNATIRR 179 TQAVSFH 153 ASQMAEP 291 229 LSILMGA 348 FGIAMTF 269 | CVTQLL 480 | : | : | | CLTTML 536

```
101 VSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILJITIANIANLASTATAITIQRDWIV 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     214 ---VSMCVEYVLLWKVYQKTPALAVKAG-LKEEETELKQLNLHKDTEPKPLEGTHLMGVK 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   306 PVF-LAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASA-----ITGIMG-- 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          340 NIFQRAGVGQPVYYATI-GVGVVNTVF-----TVISVFLVEKAGRRSLFLAGLMGML 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109 WSLSVSMF----AVGGMVSSFTV-----GWIGDRLGRVK----AMLVVN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145 VLSIAGNLLMGLAKMGPSHIL-IIAGRAITGLY------CGLSSGLVP-----M 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161 VVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG----WNL--- 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             284 --EİAEMEKEKQEAASEKRVSIGQLFSSSKYRQAVIVALMVQISQQFSGINA--IFYYST 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42 WHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWV-DKNARLKVAQTSLVVQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |: ::: || : | :| | :| |:: || :| |:: || :: || :: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || |:: || 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.6%; Score 104; DB 2; Length 534;
20.1%; Pred. No. 0.086;
ive 73; Mismatches 126; Indels 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357 --TVAFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFM----PG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Tartaglia, Louis A.
APPLICANT: Weng, Xun
TITLE OF INVENTION: UNCLEIC ACID MOLECULES ENCODING
TITLE OF INVENTION: GLUTEX AND USES THEREOF
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 225 Franklin Street
CITY: Boston
   CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/09/031,392
RILING DATE: 26-FEB-1998
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                      07334/072001
                                                                                                                                                                                                                                   NAME: Meiklejohn, Ph.D., Anita L. REGISTRATION NUMBER: 35,283
REFERENCE/DOCKET NUMBER: 07334/07;
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              396 --SPLDLSVSPFEDIRSRFIQG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              443 GPRPAAIAVAGFCNWACNFIVG 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/09299549 Patent No. 6136547
IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 534 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 20.1%
Matches 89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEX: 200154
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-031-392-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-299-549-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                        APPLICANT: Gary L.

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BADWANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILE REPERBNCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
LENGTH: 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           274 IPMAFIYLVTSLEAI-----GDVTATSKLS-----NQPVDGPQWMQRIKGGVLVNGANS 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59 LLTAVYGLVVAGSVLVLG-AIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHK 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  179 EGLISMGGGYQAMQDH----TFASADNLIMSCTVLAI----IIVL---NRIRIVWIKSSA 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFL-----YMTVLGFDC1TT 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L-----LAGLENTFPSSVFAQNNGVIQLTGVASRYVGIWIAALLILLGLEPAVA 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118 HELLTMYHGWVLTSCYILITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATI 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330 G--YAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLILC 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                388 VISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIYMS---NGSNSANIVPE 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----LPELFKNIFSSGVATGGIAALILNV 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               178 RRIDQLTNILAPMAVGQIMT------FGSPVIGC-----GFISGWNLVSMCVEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  221 VLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPLEGTHLM-----GVKDSNIHE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.7%; Score 107; DB 4; Length 465;
20.0%; Pred. No. 0.034;
.ive 74; Mismatches 140; Indels 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/09031392
Patent No. 5942398
GENERAL INFORMATION:
APPLICANT: Tartaglia, Louis A.
APPLICANT: Weng, Xun
TITLE OF INVENTION: ENCODING GLUTEX AND USES THEREOF
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eish & Richardson P.C.
225 Franklin Street
                        Sequence 5222, Application US/09328352
Patent No. 6562958
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: PRT
; ORGANISM: Acinetobacter baumannii
US-09-328-352-5222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 20.0%
nes 85; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          445 TSPES 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VLPET 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: 225 F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE: MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
US-09-031-392-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

24;

us-09-715-927-6.rai

```
NUCLEIC ACID MOLECULES ENCODING GLUTEX AND USES THEREOF
                                                                              ADDRESSEE: Fish & Richardson P.C.
STREET: 225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PILING DATE: 05-Jul-2000
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/299,549
FILING DATE: «UNKNOWN.»
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --SPLDLSVSPFEDIRSRFIQG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
Weng, Xun
FITLE OF INVENTION: NUCLEIC
                                                                                                                                                COUNTRY: USA
ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 617/542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS
LENGTH: 534 amino ac
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   270 DSNIHELEHEQEPTCAS--
                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEX: 200154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity ?
``r'hes 89; Conservat
                                                                                                                CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42 WHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWV-DKNARLKVAQTSLVVQN 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ------AVGGMVSSFTV------GWIGDRLGRVK----AMLVVN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 VSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIV 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               236 LSGVAALLQFFLLLCPESPRYLYIKLGKVEEAKKSLKRLRGNCD----PMK----- 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145 VLSIAGNLLMGLAKMGPSHIL-IIAGRAITGLY------CGLSSGLVP-----M 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161 VVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG----WNL--- 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----SQVLGLDFLLGNDELWPLLLG 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        214 ---VSMCVEYVILLWKVYQKTPALAVKAG-LKEEETELKQINLHKDTEPKPLEGTHLMGVK 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              306 PVF-LAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASA-----ITGIMG-- 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---- QMAEPFRTFRDGWVSYYNQ 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch 3.6%; Score 104; DB 3; Length 534;
1 Similarity 20.1%; Pred. No. 0.086;
89; Conservative 73; Mismatches 126; Indels 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --TVAFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFM----PG-
                                                                          COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows95
OPERATING SYSTEM: Windows95
CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/09/299,549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187 YVSEVSPTALRGALGTLHQLAIVTGILI-----
                                                                                                                                         APPLICATION DATE: US/09/299,549
FILING DATE: 26-APR-1999
PRICATION NUMBER: 09/031,392
FILING DATE: 26-FEB-1998
ATTORNEY/AGENT INFORMATION:
NAME: Weiklejohn, Ph.D., Amita L.
REGISTRATION NUMBER: 35,283
REFERENCE/DOCKET NUMBER: 07334/072002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
US-09-610-417-4
; Sequence 4, Application US/09610417
; Patent No. 6346374
; GENERAL INFORMATION:
. APPLICANT: Tartaglia, Louis A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                396 -- SPLDLSVSPFEDIRSRFIQG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443 GPRPAAIAVAGFCNWACNFIVG 464
                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            270 DSNIHELEHEQEPTCAS--
                                                                                                                                                                                                                                                                                                                                                                                                         : 534 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                      TELEX: 200154
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                    617/542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
          COUNTRY: USA
ZIP: 02110-2804
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109 WSLSVSMF---
                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                      TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-299-549-4
                                                                                                                                                                                                                                                                                                                                                                                                       ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S:
Matches 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
----SOVLGLDFLLGNDELWPLLLG 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42 WHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWV-DKNARLKVAQTSLVVQN 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109 WSLSVSMF-----AVGGMVSSFTV-----GWIGDRLGRVK----AMLVVN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101 VSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIV 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLSIAGNLLMGLAKMGPSHIL-IIAGRAITGLY------CGLSSGLVP-----M 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          161 VVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG----WNL--- 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---VSMCVEYVLLWKVYQKTPALAVKAG-LKEEETELKQLNLHKDTEPKPLEGTHLMGVK 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -QMAEPFRIFRDGWVSYYNQ 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       284 --EİAEMEKEKQEAASEKRVSIGQLFSSSKYRQAVIVALMVQISQQFSGINA--IFYYST 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PVF-LAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASA-----ITGIMG-- 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       340 NIFQRAGVGQPVYYATI-GVGVVVNTVF------TVISVFLVEKAGRRSLFLAGLMGML 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          391 ISAVAMT-----VGLV---LLSQFAWMSYVSMVAIFLFVIFFEVGPGPIPWFIVAELFSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 534;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --TVAFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFM----PG
COMPUTER: IBM Compatible
OPERATING SYSTEM: Windows95
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/610,417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.6%; Score 104; DB 4; L 20.1%; Pred. No. 0.086; trive 73; Mismatches 126;
                                                                                                                                                                                                                                                                                                                                                         NAME: Meiklejohn, Ph.D., Anita L.
REGISTRATION NUMBER: 35,283
REFERENCE/DOCKET NUMBER: 07334/072002
```

443 GPRPAAIAVAGFCNWACNFIVG 464

Search completed: November 5, 2003, 18:37:14 Job time : 25 secs

```
US-09-973-180-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 571
                                  103.5
102.5
102.5
102.5
101.5
101.5
101.5
                                                                                                                                                                                                           1000.5
1000.5
1000.5
98.5
98.5
98.5
98.5
98.5
98.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 130, App
Sequence 460, App
Sequence 460, App
Sequence 10350, A
Sequence 6, Appli
Sequence 6, Appli
Sequence 3641, App
Sequence 3641, App
Sequence 28, Appli
Sequence 2, Appli
Sequence 2, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Appli
Sequence 3, Appli
Sequence 4, Appli
                                                                                                 5, 2003, 18:32:22 ; Search time 45 Seconds (without alignments) 2179.308 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                       1 MTRAGDHNRQRGCCGSLADY.....ACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Published Applications A4:

(gn2_6/prodata/2/pubpaa/US07_PUBCOMB pep:*

(gn2_6/prodata/2/pubpaa/US07_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US06_PUBF_DUB.pep:*):

(gn2_6/prodata/2/pubpaa/US06_PUBF_DUB.pep:*):

(gn2_6/prodata/2/pubpaa/US07_NEW_PUB.pep:*):

(gn2_6/prodata/2/pubpaa/US08_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US08_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US08_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US09_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US09_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US09_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US09_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US09_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US09_PUBCOMB.pep:*):

(gn2_6/prodata/2/pubpaa/US10B_PUBCOMB.pep:*):

enCore version 5.1.6
(c) 1993 - 2003 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 US-09-973-180-2

1 US-09-973-180-3

1 US-09-973-180-4

1 US-09-729-674-130

1 US-09-809-391-460

2 US-09-809-391-460

2 US-10-156-761-10350

2 US-10-156-761-10350

2 US-10-1283-423-6

2 US-10-283-423-6

2 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730

0 US-09-738-626-6730
                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                              644079 segs, 171749292 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Applications AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                              protein search, using sw model
                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length DB
                                                                                                                                                                     US-09-715-927-6
2929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                571
571
3871
383
383
383
575
575
537
537
537
618
              Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Published
                                                                                                  November
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2924
2924
2922
2922
2917
1789
125.5
120
120
114.5
114.5
114.5
                                                                  OM protein -
                                                                                                                                                                                                                                                                                                                                                                Minimum DB
Maximum DB
                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š.
```

```
Sequence 72, Appl
Sequence 28, Appl
Sequence 23, Appl
Sequence 11512, A
Sequence 11512, A
Sequence 13794, A
Sequence 6, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 34, Appli
Sequence 33, Appl
Sequence 34, Appli
Sequence 34, Appli
Sequence 26, Appli
Sequence 27, Appli
Sequence 28, Appli
Sequence 28, Appli
Sequence 6, Appli
Sequence 6, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 28, Appl Sequence 46, Appl Sequence 6998, Appl Sequence 64, Appl Sequence 44, Appl Sequence 46, Appl Sequence 4
                              Sequence 4, Appli
Sequence 14861, A
Sequence 17, Appl
Sequence 10767, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 33,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
               10 US-09-981-947h-4
15 US-10-156-761-14861
10 US-09-981-947h-4
11 US-10-156-761-14861
11 US-10-156-761-17
12 US-10-051-990-28
13 US-10-187-267h-43
14 US-10-051-990-28
15 US-10-187-267h-43
15 US-10-187-267h-43
16 US-10-205-823-36
17 US-10-205-823-36
18 US-09-828-746-6
19 US-09-828-746-6
19 US-09-828-746-6
19 US-09-828-746-6
19 US-09-828-746-6
19 US-09-828-746-6
19 US-09-828-746-6
11 US-10-10-174-833
15 US-10-121-746-83
16 US-10-121-746-83
17 US-10-121-746-83
18 US-10-121-746-83
19 US-09-138-626-6998
11 US-09-138-626-6998
11 US-09-138-626-6998
11 US-09-138-625-205
11 US-09-138-625-205
12 US-10-001-073-46
13 US-09-888-055-205
14 US-09-888-055-205
15 US-10-01-173-161-30
```

## ALIGNMENTS

```
Sequence 2, Application US/09973180

Sublication No. US20030082553A1

GRNERAL INFORMATION:
GRNERAL INFORMATION:
Heutink, P
TITLE OF INVENTION:
FILE REFERENCE: 24584
CURRENT APPLICATION NUMBER: US/09/973,180

CURRENT FILING DATE: 2001-10-10

PRIOR PAPLICATION NUMBER: 60/301,429

NUMBER OF SEQ ID NOS: 4

SOFTWARE: Patentin version 3.1

SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LIMYHGWVLTSCYILIITIANIADLASTATAITIQRDWIVVVAGEDRSKLANMATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 TAVYGLVVAGSVLVLGALIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MTRAGDHNRORGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MTRAGDHNRORGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 99.8%; Score 2924; DB 11; Best Local Similarity 99.8%; Pred. No. 3.7e-272; Matches 570; Conservative 1; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Homo sapiens US-09-973-180-2
```

9 6 6 B	DQLTNILAPMAVGQIMTFGSPVIGGGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK EBETELKQLALHKDTEPRPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV	00 60 60 60 60 60 60 60 60 60 60 60 60 6	EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
y d	301 SYYNQPVFLAGMGLAFLYMTVLGFDCTTTGYATTQGLGGSILSILMGASAITGIMGTVAF 360 	රු සි	361 TWLRRKCGLVRTGLISGLAQLSCLILCVISVPMPGSPLDLSVSPFEDLKSKFIQGESITP 420 
oy Oy	361 TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP 420	S GS	421 TKIPBITTBIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL 480
ço q	421 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARICLWSFDLTVTOLL 480 	ò a	481 QENVIESERGIINGVQNSMYYLLDLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR 540 
රු යු	481 QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR 540 	රු දු	541 FAQNTLGNKLFACGFDAKEVRKENQANTSVV 571 
ර් සි	541 FAQNTLCHKLFACGPDAKEVRKENQANTSVV 571 	RESULT US-09-97	RESULT 3 US-09-973-180-4
RESULT US-09-9 ; Seque	73-180-3 ence 3, Application US/08973180 ication No. US20030082553A1	Sequent Public General Applic TITLE FILE	Sequence 4, Application 05/03975180  Publication No. US20030082553A1  GENERAL INFORMATION:  APPLICANT: OSETIA: Ben  TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS FOR AUTOSOMAL DOMINANT HEMOCHROMATOSI.
APPI APPI TITI FILE	ρς (	CURRI CURRI PRIOF	CURRENT AFFLICATION NUMBER: US/9/9/3,180 CURRENT FILING DATE: 2001-10-10 PRIOR APPLICATION NUMBER: 60/301,429 PRIOR FILING DATE: 2001-06-29
CUR CURI PRIC PRIC NUME	; CURRENT APPLICATION NUMBER: US/09/9/3,180 ; CURRENT FILING DATE: 2011-10-10 ; PRIOR APPLICATION NUMBER: 60/301,429 ; PRIOR FILING DATE: 2001-06-29 ; NUMBER OF SEQ ID NOS: 4	; NUMBE; ; SOFTW ; SEQ II ; LENC ; TYPE	NUMBER OF SEQ ID NOS: 4 SOFTWARE: PatentIn version 3.1 LENGTH: 571 TYPE: PRT
SOFT SEQ 1 LEN TYE	SOFTWARE: Patentin version 3.1 SEQ IO NO 3 LENGTH: 571 TYPE: PRT ORGANISM: Homo sapiens		ORGANISM: Homo sapiens FEATURE: NAME/KEY: misc_feature LOCATION: 144 OTHER INFORMATION: Xaa = any amino acid except Asp
rn en	NAME/KEY: VARIANT LOCATION: 144 OTHER INFORMATION: 9-973-180-3	Query Best Match	Ouery Match  Query Match  Best Local Similarity 99.8%; Score 2922; DB 11; Length 571;  Matches 570; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Query Ma Best Loc Matches	Query Match Best Local Similarity 99.8%; Score 2924; DB 11; Length 571; Best Local Similarity 99.8%; Pred. No. 3.7e-272; Matches 570; Conservative 1; Mismatches 0; Indels 0; Gaps 0;	<i>k</i> 98	1 MTRAGDHNRORGCGSLADYLTSAKFLLYLGHSLSTWGDRWWHFAVSVFLVELYGNSLLL 60 
ò q	1 MTRAGDHINRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL 60	% qa	61 TAVYGLVVAGSVLVLGAIIGDWVDKVARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120 
<i>ò</i> ∙ qa	61 TAVYGLVVÄGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120 	& 48	121 LTMYHGWVLTSCYILIITIANIANIASTATAITIQRDWIVVVAGEDRSKLANMATIRRI 180 
oy Oy	121 LTMYHGWVLTSCYILITTIANIANLASTATAITIQRDMIVVVAGEDRSKLANMVATIRRI 180 	λο qq	181 DOLTNILAPMAVGQIMTFGSPVIGGEISGMNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240 
oy ob	181 DOLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240 	ò qa	241 BEFTELKOLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASOWAEPFRTFRDGWV 300 
8 /	241 EBETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRIFRDGWV 300	ò	301 SYXNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF 360

<del>a</del> ò g ò g ò

ò

```
360
                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309
                                              240
                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481 QENVIESERGIINGVQNSMNYLLXLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 NIHKDTEPKPLEGTHLMGVKDSNIHBLEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 AGMGLAFLYMTVLGFDCITTGYAYTQGLSGFHPQYFDGSISYNWNNGNCSFYLATSKMWF 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 GSAGLISGLAQLSCLILCVISVFMPGSPLDLSVSFEDIRSRFIQGESITPTKIPEITTE 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGL 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    370 VRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         430 IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                         301 SYXNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                     361 TWLRRKCGLVRTGLISGLAQLSCLILCVISVFWPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                      421 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLMSFDLTVTQLL
                              181 DQLTNIIAPMAVGQIMTFGSPXIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                     EEETELKQLNIHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                               SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                     TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                            TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                  QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250 NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL
                                                                                          EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               190 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEETTELKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             - consult PALM or file wrapper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 61.1%; Score 1789; DB 11;
Best Local Similarity 92.4%; Pred. No. 2.8e-163;
Matches 353; Conservative 3; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Ruben et al.
TITLE OF INVENTION: 186 Human Secreted proteins
FILE REFERENCE: PZ002D2
CURRENT APPLICATION NUMBER: US/09/809,391
CURRENT FILING DATE: 2001-03-16
Prior application data removed - consult PALM or
NUMBER OF SEQ ID NOS: 761
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; OTHER INFORMATION: Xaa equals stop translation US-09-809-391-460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FAONTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541 FAONTLGNKLFACGPDAKEVRKENOANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Sequence 460, Application US/09809391; Publication No. US20030049618A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: SITE
LOCATION: (383)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-809-391-460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 383
                                                                                          241
                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                      241
                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                       g
                                                                                          ð
                                                                                                                            a
                                                                                                                                                                          ò
                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: COLIMIE TAGECY, David
APPLICANT: Metherg, David
APPLICANT: Treacy, Murica
APPLICANT: Treacy, Muricael J.
APPLICANT: Steininger II, Robert J.
APPLICANT: Spaniding, Vikki
APPLICANT: Spaniding, Vikki
APPLICANT: Spaniding, Vikki
APPLICANT: Fetherl, Kim
APPLICANT: Glark, Hilary
APPLICANT: Genetics Institute, Inc.
TITLE OF INVENTION: SECRETED PROTEINS AND POLYNUCLEOTIDES ENCODING THEM
FILE REFERENCE: 6055-64X
CURRENT APPLICATION NUMBER: US/09/729,674
CURRENT FILING DATE: 2000-12-04
PRIOR APPLICATION NUMBER: 09/539,330
PRIOR FILING DATE: 2000-03-30
NUMBER OF SEQ ID NOS: 283
SOFFWARE: Patentin Ver. 2.0
SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                             TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                    QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIIIMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99.6%; Score 2917; DB 9; Length 571;
99.6%; Pred. No. 1.7e-271;
iive 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                            541 FAONTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                        541 FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 130, Application US/09729674; Patent No. US20010039335A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Jacobs, Kenneth
APPLICANT: McCoy, John M.
APPLICANT: LaVallie, Edward R.
APPLICANT: Collins-Racie, Lisa
APPLICANT: Evans, Cheryl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 99.6
Matches 569, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: UNSURE LOCATION: (202)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: UNSURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; LUCATION: (504-US-09-729-674-130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 130
  301
                                           361
                                                                                     361
                                                                                                                                 421
                                                                                                                                                                          421
                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
```

g

à

셤 ò

```
NR APPLICATION NUMBER: 60/043,314

NR FILING DATE: 1997-04-11

NR PELICATION NUMBER: 60/043,569

NR FILING DATE: 1997-04-11

NR APPLICATION NUMBER: 60/043,311

NR APPLICATION NUMBER: 60/043,611

NR FILING DATE: 1997-04-11

NR APPLICATION NUMBER: 60/043,674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R APPLICATION NUMBER: 60/043,672

R FILING DATE: 1997-04-11

R APPLICATION NUMBER: 60/043,315

R FILING DATE: 1997-04-11

R APPLICATION NUMBER: 60/048,974

R APPLICATION NUMBER: 60/056,886

R FILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,886

R FILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,889

R FILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,893

R FILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,893

R FILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,893
                                                                                                                                                                                                                                                                                                                                        R APPLICATION NUMBER: 60/047,601
R FILING DATE: 1997-05-23
R APPLICATION NUMBER: 60/043,580
R FILING DATE: 1997-04-11
R APPLICATION NUMBER: 60/043,568
R PILING DATE: 1997-04-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R FILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,662

R FILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,872

R PILING DATE: 1997-08-22

R APPLICATION NUMBER: 60/056,882

RR APPLICATION NUMBER: 60/056,882

RR APPLICATION NUMBER: 60/056,882

RR APPLICATION NUMBER: 60/056,882

RR APPLICATION DATE: 1997-08-22
                                APPLICATION NUMBER: 60/047,613
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                    FILING DATE: 1997-05-23
APPLICATION NUMBER: 60/047,632
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 1997-04-11
APPLICATION NUMBER: 60/043,312
FILING DATE: 1997-04-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/056,880
FILING DATE: 1997-08-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 60/056,894
FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/056,911
FILING DATE: 1997-08-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/056,636
FILING DATE: 1997-08-22
                                                                                                APPLICATION NUMBER: 60/047,582
FILING DATE: 1997-05-23
                                                                                                                                                          APPLICATION NUMBER: 60/047,596
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/056,878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/056,879
                                                                                                                                                                                                                           APPLICATION NUMBER: 60/047,612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/043,313
FILING DATE: 1997-04-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 60/056,903
FILING DATE: 1997-08-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 60/056,888
         1997-05-23
                                   PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRILICAR PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR
PRIOR
PRIOR
                                                                                                                                       GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK 360
GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INVEXEMENTON: 186 Human Secreted proteins PLITES OF INVESTIVAN: Rober et al. 1717E OF INVESTIVAN: 186 Human Secreted proteins CURRENT APPLICATION NUMBER: US/09/882,171 CURRENT PILING DATE: 2001-03.16 CURRENT FILING DATE: 2001-03.16 PRIOR PEPLICATION NUMBER: 09/49,476 PRIOR PEPLICATION NUMBER: 09/49,476 PRIOR PELLING DATE: 1998-03.06 PRIOR FILING DATE: 1998-03.06 PRIOR FILING DATE: 1998-03.07 PRIOR PELLING DATE: 1998-03.07 PRIOR PELLING DATE: 1998-03.07 PRIOR PELLING DATE: 1997-03.07 PRIOR PELLING DATE: 1997-05.23 PRIOR PELLING DATE: 1997-05.23 PRIOR PELLING DATE: 1997-05.23 PRIOR PELLING DATE: 1997-05.23 PRIOR PELLING DATE: 1997-05.23 PRIOR PELLING DATE: 1997-05.23 PRIOR APPLICATION NUMBER: 60/047,503 PRIOR PELLING DATE: 1997-05.23 PRIOR PELLING DATE: 1997-05.23 PRIOR PELLING DATE: 1997-05.23 PRIOR APPLICATION NUMBER: 60/047,503 PRIOR PELLING DATE: 1997-05-23 PRIOR APPLICATION NUMBER: 60/047,504 PRIOR PELLING DATE: 1997-05-23 PRIOR APPLICATION NUMBER: 60/047,509 PRIOR APPLICATION NUMBER: 60/047,509 PRIOR PELLING DATE: 1997-05-23 PRIOR APPLICATION NUMBER: 60/047,509 PRIOR PELLING DATE: 1997-05-23 PRIOR APPLICATION NUMBER: 60/047,509 PRIOR PELLING DATE: 1997-05-23 PRIOR PELLING DATE: 1997-05-23 PRIOR PELLING DATE: 1997-05-23 PRIOR PEL
                                                                                                                                                                                                                                                              550 LFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 460, Application US/09882171
Publication No. US20030175858A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                            RESULT 6
US-09-882-171-460
                                      241
                                                                                                   490
                                                                                                                                                             301
                                                                                                                                                                                                                                                                                     361
                                                                                                                                                          g
                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                        셤
                                                                                                   ઠે
```

```
23;
       249
                                                                                                      309
                                                                                                                               429
                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                        241 IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         310 AGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGL 369
                                                                                                                                                                                                                                                                                                                                                                                                 IYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESER 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DLQW--VIDGYTVPYAALMLLLGAIGDKYSRRGALVLGLVVFGG----GAVAGSLVDSAT 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----LLTM 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             111 GVIAARAVMGVGAALIMPATLSLLAATFPRAERAKAITLWTATAGLAIAAGPLVAGALLQ 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              171 NHGW--SSTFLINVPIAFVAVIGT------FVLVPPSRA-----AHHHRIDYV 210
                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                87
                                                                                                                                                                                                                                                                                                                                 181 GSAGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEIITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNK
                                      1 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQL
                                                                                                                                                                                                                                                                                                370 VRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTE
                                                                                                      NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL
     190 MAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DRMWHFAVSVFLVELYGNSLLLTA------VYGLVVAGSVLVLGAIIGDWVDKNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124 YHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              184 TNILAPMAVGQI---MTFGSPVIGCGFISGWNLVSMCVEYVLL--WKVYQKTPALAVKAGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 4.3%; Score 125.5; DB 15; Length 575; Best Local Similarity 20.4%; Pred. No. 0.0049; Matches 102; Conservative 70; Mismatches 162; Indels 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: SHIBA, TADAYCSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR PILING DATE: 2001-05-30
PRIOR FILING DATE: 2001-06-02
PRIOR FILING DATE: 2001-06-02
PRIOR FILING DATE: 2001-06-03
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 10350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88 RLKVAQTSLVVQNVSVILCGIILMMVFLHKHE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Sequence 10350, Application US/10156761
Publication No. US20030119018A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LFACGPDAKEVRKENOANTSVV 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT
; ORGANISM: Streptomyces avermitilis
US-10-156-761-10350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROSHI
APPLICANT: SHIBA, TADAYOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: OMURA, SATOSHI APPLICANT: IKEDA, HARUO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -10-156-761-10350
                                                                                                   250
                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57
                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                              ò
                                                                                                                                            요
                                                                                                                                                                                               ò
                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                          음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 61.1%; Score 1789; DB 12;
Best Local Similarity 92.4%; Pred. No. 2.8e-163;
Matches 353; Conservative 3; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R APPLICATION NUMBER: 60/056,875
R FILING DATE: 1997-08-22
R FILING DATE: 1997-08-22
R PILING DATE: 1997-08-22
R APPLICATION NUMBER: 60/056,887
R APPLICATION NUMBER: 60/056,908
R APPLICATION NUMBER: 60/056,908
R FILING DATE: 1997-08-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R APPLICATION NUMBER: 60/043,670
R FILING DATE: 1997-04-11
R APPLICATION NUMBER: 60/056,632
R FILING DATE: 1997-08-22
R APPLICATION NUMBER: 60/056,664
R FILING DATE: 1997-08-22
                                                                                                                                                                                                                                                            FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/057,761
FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/047,595
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 1997-05-23
APPLICATION NUMBER: 60/047,588
FILING DATE: 1997-05-23
                                                                                                                                                                                          APPLICATION NUMBER: 60/056,845
FILING DATE: 1997-08-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/043,578
FILING DATE: 1997-04-11
APPLICATION NUMBER: 60/043,576
                                             APPLICATION NUMBER: 60/056,910
FILING DATE: 1997-08-22
                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/056,892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/047,585
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/056,876
FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/056,881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/056,909
FILING DATE: 1997-08-22
                                                                                           APPLICATION NUMBER: 60/056,864
FILING DATE: 1997-08-22
                                                                                                                                            APPLICATION NUMBER: 60/056,631
FILING DATE: 1997-08-22
                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/047,599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ICATION NUMBER: 60/047,586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/047,590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 1997-05-23
APPLICATION NUMBER: 60/047,594
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 60/047,589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 1997-05-23
APPLICATION NUMBER: 60/047,593
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/047,501
FILING DATE: 1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/057,650
FILING DATE: 1997-09-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 1997-08-22
APPLICATION NUMBER: 60/057,669
FILING DATE: 1997-09-05
APPLICATION NUMBER: 60/056,874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATION NUMBER: 60/047,614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/048,964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/056,884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1997-05-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 1997-06-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 1997-04-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 1997-05-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                           PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR
```

QY         194 QIMTEGSBVIGCGFISGWNLVSMCVEYVLLWK 225           ::::::::::::::::::::::::::::::::::::	RESULT 9 US-10-213-821-6 Sequence 6, Application US/10213821 Publication No. US20030180297A1 GENERAL INFORMATION: APPLICANT: Pharmacia & Upiphn APPLICANT: Smith, Valdin G. APPLICANT: Swith, Valdin G. APPLICANT: Lowery, David E. APPLICANT: Lowery, David E. APPLICANT: Smith, Valdin G. TITLE OF INVENTION: Drosophija G Protein Coupled Receptors, Nucleic Acids, And M. TITLE OF INVENTION: Related To The Same FILE REFERENCE: 6297_2Cp CURRENT APPLICATION NUMBER: US/10/213,821 CURRENT APPLICATION NUMBER: 09/693,746 PRIOR FILING DATE: 1999-10-22 NUMBER OF SEQ ID NOS: 185 SEQ ID NO 6 LENGTH: 458 TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT TYPE: PRT SEQ ID NO 6 SED ID NO 6	Query Match         4.1%; Score 120; DB 12; Length 458;           Best Local Similarity 20.1%; Pred. No. 0.012;         No. 0.012;           Matches 77; Conservative 60; Mismatches 98; Indels 148; Gaps 21;           QY         5 GDHNRQRGCGSLADYLTSAKFLIXLG	OY 141 NIANLASTATAITIORDMIVVVAGEDRSKLANMNATIRRIDOLTNILA-PMAV-G 193  162
	Oy 403 SPFED-IRSRPIQGESITPTKIPEITHEIYNSNGSNSANIVPETSPESVP 451  Db 383 SPCTDAIMGAFPEAELGYGGAVNDTSLELGGSLGIALGSVLAGSYSSHLSDATTGSKLP 442  Oy 452 IISVSLLFAGVIARA 466  ::	Earlier Applications  PRIOR PAPLICATION UNMBER: PriorAppNumber: 09/693,746  PRIOR FILING DATE: PriorFilingDate: 2000-10-20  PRIOR FILING DATE: PriorFilingDate: 1999-10-22  NUMBER OF SEQ ID NOS: 187  SOFTWARE: PatentIn version 3.2  SOFTWARE: PatentIn vers	GDHNRQRGCGSLADYLTSAKFLLYLGHSLSTWG

Methods

```
RI-----VLICTIGMCV-----TTAGFWVLTILGNENIWLLINFS 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             140 ---ANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIM 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     197 TFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQ----KTPALAVKAGLKEEFTELKQLNLH 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253 KDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGM 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         86 NARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLT----SCYILITI- 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 118 LQQAFFAVNQPTRTAIL--RSILPI-----DQLASATSLNMLLMQTGAİVGPLIAGALI 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----FASVVDGLKYLAGÓPVLL--- 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               313 GLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----MVMVLDLIAMIFGMPRALYPEIAEVNFGGGDAGATM--LAFMYSSMAVGAVLG 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21 LWLGNVATVIGAQLTVVAVPVQIYQMTGSSGYVGLTGLFGLIFLVIFGLYGGSIADAFDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28 LYLGHSLSTWGDRMWHFAVSVFLVELYGNS--LLLTAVYGLVVAGSVLVLGAIIGDWVDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
3.9%; Score 114.5; DB 10; Length 424;
Best Local Similarity 21.4%; Pred. No. 0.035;
Matches 86; Conservative 55; Mismatches 131; Indels 129;
457 ---- LLFAGVIAARIGLWSFDLTVTQLLQENVIESERGIINGVQ 496
                                              + 53 AGDMVFIPDVIEVPAGK----SLEVTMLNEDDMVHDLK-FANGVQ 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |::|| ::|: ::|
GVLSGWVARISROGVAVYWCIIAWGAAVALGG--VAIVVSP 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLISG-LAQLS------CLILCVISVFMPGSPLDLSVSP 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: OZAKI, AKIO
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/738,626
CURRENT FILING DATE: 2000-12-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT FILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: JP 99/377484
PRIOR FILING DATE: 1999-12-16
PRIOR APPLICATION NUMBER: JP 00/159162
PRIOR PELING DATE: 2000-04-07
PRIOR FILING DATE: 2000-04-07
PRIOR FILING DATE: 2000-08-03
NUMBER OF SEQ ID NOS: 7059
SOFTWARE: Patentin ver. 3.0
                                                                                                                                                                                                                                 Sequence 3641, Application US/09738626
Publication No. US20020197605A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Corynebacterium glutamicum
                                                                                                                                                                                                                                                                                                                                         APPLICANT: NAKAGAWA, SATOSHI
APPLICANT: MIZOGUCHI, HIROSHI
APPLICANT: ANDO, SEIKO
APPLICANT: HAYASHI, MIKIRO
APPLICANT: OCHIAI, KEIKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YOKOI, HARUHIKO
TATEISHI, NAOKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SENOH, AKIHIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IKEDA, MASATO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: 249-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Cory;
US-09-738-626-3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                         g
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77 AIIGD------WVDKNARLKVAQTSLVVQ--NVSVILCGIILMMVFLHKHELLTMYHGW 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52 AITNSIVVWSQHFTEKFLHLKLEESKRPAQLLKIRVLNVGIIVTIIG------QMIGQW 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ::|| |: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1: || 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148 ------TATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQI 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 312 MGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILM--GASAI-TGIMGTVAFTWLRRKCG 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----THILNTAG 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --LAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRF 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196 MTFGSPVIGCGFI--SGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHK 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   254 DTEPKPLEGTHLMGVKDSNIH--ELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAG 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                346 LFRWTLINGGLAIWLLTDNSWLRVVVSLLSIGALAVFVILLP-------KAVRAQ- 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IQG-----ESITPIKIP---BITTEIYM-----SNGSNSANIVP-ETSPESVPIISVS 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 STWSSRTWHRKASRPVSIWLMV------LVIAGIIHPLLPEYRWVLIHLFTLG 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.1%; Score 119; DB 10; Length 537; 20.9%; Pred. No. 0.019; ive 72; Mismatches 172; Indels 218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----TIANIANLAS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       272 TŤAPLWĽVĠŤLVWLAVQAVMHDGEĽYHVEVPŤIÁ-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    306 -----LVIGF-----GAQLLIGVMSYLLPSTMGGGASAVRTG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35 STWGDRMWH----FAVSVFLVELYGNSLLLTAVYGLVVAGSV---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: OZAKI, AKIO
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/738,626
CURRENT FILING DATE: 2000-12-18
PRIOR APPLICATION NUMBER: UP 99/377484
PRIOR FILING DATE: 1999-12-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: JP 00/159162
PRIOR FILING DATE: 2000-04-07
PRIOR APPLICATION NUMBER: JP 00/280988
PRIOR FILING DATE: 2000-08-03
NUMBER OF SEQ ID NOS: 7059
SOFTWARE: Patentin ver. 3.0
SEQ ID NO 6730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 128 VLTSCYILII-------
                                                         Sequence 6730, Application US/09738626
Publication No. US20020197605A1
GENERAL INFORMATION:
APPLICANT: NAKAGAWA, SATOSHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ) ORGANISM: Corynebacterium glutamicum
US-09-738-626-6730
                                                                                                                                                                                             MIZOGUCHI, HIROSHI
                                                                                                                                                                                                                                                          HAYASHI, MIKIRO
OCHIAI, KEIKO
YOKOI, HARUHIKO
TATEISHI, NAOKO
SENOH, AKIHIRO
IKEDA, MASATO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 20.9*
Matches 122; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                369 LVRTGLISG------
                                                                                                                                                                                                                                 ANDO, SEIKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: 249-125
                     -09-738-626-6730
                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        413
                                                                                                                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT
APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
```

80

```
SEQ ID NO 38
LENGTH: 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85 KNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIAN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107 AIAFAFSRTANKAIİTEVVEKD--EIVIYNSRLELVLQVVGVSSPVLSFLVLQFAS---- 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                205 CGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKPLEGTH 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161 -----EKKAFTGED 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               265 L-MGVKDSNIHELEHEQE----PTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYM 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200 IFVDIKD-GLHYIWHQQEIFFLLLVASSVNFFFAAF-EFLLPFSNQL----YGSEGAYA 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -- 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              145 LASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIG 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TVLGFDCITTGYAYTQGLSGSILSILMGASAİTGIMGTVAFTWLRRKCGLVRTGLISGLA 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30 LGHSLSTWGDRMWHFAVSVF---LVELYGNSLLLTAVYGLVVAGSVLV--LGAIIGDWVD 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17 MGNMLYDYGNSVWLASMGTIGQTVLGMYQISELVT-----SILVNPFGGVIS---D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67; Mismatches 132; Indels 108; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Bayer Aktiengesellschaft
TITLE OF INVENTION: Receptors for peptides from insects
FILE REFERENCE: Le A 34 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  253 SIL-----TMGAIGSIIGALLASKIKANIYNL----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.9%; Score 114; DB 12; 20.1%; Pred. No. 0.035;
            Sequence 120, Application US/09769744A
Publication No. US20030134407A1
GENERAL INFORMATION:
APPLICANT: Le Page, Richard WF
APPLICANT: Hanniffy, Sean B
APPLICANT: Hanniffy, Sean B
APPLICANT: Hansbro, Philip M
TITLE OF INVENTION: Proteins
FILE REFERENCE: PWC/P21122W
CURRENT APPLICATION NUMBER: US/09/769,744A
CURRENT FILING DATE: 1999-07-27
PRIOR APPLICATION NUMBER: GB 9816336.3
PRIOR FILING DATE: 1999-07-27
PRIOR FILING DATE: 1999-07-27
PRIOR APPLICATION NUMBER: US 60/125329
PRIOR FILING DATE: 1999-03-19
NUMBER: PALCATION NUMBER: US 60/125329
NUMBER: PALCATION NUMBER: US 60/125329
NUMBER: PALCATION NUMBER: US 60/125329
SEQ ID NOS: 196
SOFTWARE: PALCATION VUMBER: US 60/125329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/804,551B
CURRENT FILING DATE: 2001-03-12
PRIOR APPLICATION NUMBER: DE 100 13 618.4
PRIOR FILING DATE: 2000-03-18
NUMBER OF SEC ID NOS: 92
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        280 -LILLALTGVGVFMMGLPLPTFLS 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 380 QLSCLILCVISVFMPGSPLDLSVS 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 38, Application US/09804551B Patent No. US20020056151A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , ORGANISM: Streptococcus pneumoniae US-09-769-744A-120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -09-804-551B-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
Sequence 2, Application US/10419190
; Sequence 2, Application US/10419190
; Publication No. US20030166155A1
; Publication No. US20030166155A1
; Publication No. US20030166155A1
; TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS,
; TITLE OF INVENTION: AND USES THEREOF
; TITLE OF INVENTION: AND USES THEREOF
; TITLE OF INVENTION: AND USES THEREOF
; TITLE OF INVENTION: AND USES THEREOF
; TITLE OF INVENTION NUMBER: 00/212, 856
; PRIOR APPLICATION NUMBER: 00/0-015
; PRIOR APPLICATION NUMBER: 009-15
; PRIOR APPLICATION NUMBER: 009-16
; NUMBER: OF SEQ ID NOS: 4
; NUMBER: OF SEQ ID NOS: 4
; SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25;
                                                                                                                                                                                                                                                                                                                                                                                                                                           144 NL----ASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILA-PMAV-GQIM 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               206 ALCIFVSTISITAIAFDRYQVIVYPTRDSLOFVGAVTILAGIWALALLLASPLFVYKELI 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---NLVSMCVEY-----VLLWKVYQ 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  266 NIDIPALLQQIGLQDTIPYC -- IEDWPSRNGRFYYSIFSLCVQYLVPILIVSVAYFGIYN 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ------LKQLNLHKDTEPKP 259
                                                                                                                                                                                                                                                                                                                                59 GEH------LSGYASSSNSVRYLDDRHPLDYLDLGTVHALNTTAINTSDLNETGSRP 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84 DKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIA 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  324 KLKSRITVVAVQASSAQRKVERGRRMKRTNCLLISIAIIFGVSWLPLNFFNLYADMERSP 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTS-----CYILLIITIANIANLAST 148
                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39 ISIPFVEFOTYPTODYAOTAWIHSIV--DCVTWLCAPLGSVVSNHLSCQVGIMLGGLLAS 96
                                                                                                                                                                                                                                                                                                                                                                                                  39 ------DRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              46 VSVFLVEL---YGNSLLLTA-VYGLVVAGSVLVLGAIIGDWVDKNARLKV-----AQ
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 3.7%; Score 108.5; DB 12; Length 486; Best Local Similarity 22.3%; Pred. No. 0.16; Matches 106; Conservative 65; Mismatches 176; Indels 129;
                                                                                                                            Query Match 3.9%; Score 113; DB 9; Length 522; Best Local Similarity 20.0%; Pred. No. 0.067; Matches 76; Conservative 58; Mismatches 98; Indels 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        197 TFGSPV----IG-----CGFISGW----
                                                                                                                                                                                                                                                                      5 GDHNRQRGCCGSLADYLTSAKFLLYLG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       229 KTPA----LAVKAGLKEEETE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       :
384 VTQSMLVRYAICHMIGMSSA 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260 LEGT-----HLMGVKDS 271
TYPE: PRT
ORGANISM: Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Human
                                                                 US-09-804-551B-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-419-190-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-419-190-2
```

```
--KHLYLTL---GVLTGLGFALCY--SPAIAMVGKYFSR 140
                                       149 ATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAP----MAVGQIMTFGSPVIGC 205
                                                                                                                                                                                                            266 MGVKDSNIHELEHEQEPT---CASQMAEPFRIFRDGWVSYYNQPVFLA-GMGLAFLYMTV 321
                                                                                                                                                                                                                                          ---RVSPYSSLTKEWAQTCLCCCLQQEYSFLLMSD-FVVLAVSVLFWAYGCSPLFVVL-- 274
                                                                                                                                                                                                                                                                                             LGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRK-----CGLVRT 372
                                                                                                                                                                                                                                                                                                                     -----VPYALSVGVSHQQAAFLMSILGVIDIIGNITFGWLTDRRCLKNYQYVCYLFAV 327
                                                                                                                                                                                                                                                                                                                                                                              GLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIYM 432
                                                                                                                                                                                                                                                                                                                                                                                                          328 GM-DGLCYLCLPMLQSLPLLVPPS------CTFGYFDGAYVTLIPVVTTEIVG 373
                                                                                                                          GFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKPLEGTHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              374 TTSLSSALGVVYFLHAVPYLVSP---PIAGRLVDTTGSYTAAFLLCGFSMIFSSVL 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SNGSNSA-----NIVPE-TSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: THYROID SODIUM/IODIDE SYMPORTER AND NUCLEIC ACID ENCODING SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/09/995, 007
FILING DATE: 26-No. US20020123102A1-2001
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ROTHSTEIN & EBENSTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE: 3.5 INCH 1.44 Mb STORAGE DISKETTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 96700/393
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 697-5995
TELEPHONE: (212) 286-0854 or 286-0082
TELEX: TWX 710-581-4766
WATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/595,553A
FILING DATE: FEBRUARY 1, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application US/09995007
Patent No. US20020123102A1
GENERAL INFORMATION:
APPLICANT: NANCY CARRASCO, ET AL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: MS-DOS SOFTWARE: ASCII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: CRAIG J. ARNOLD
REGISTRATION NUMBER: 34,287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: AMSTER, ROTI
STREET: 90 PARK AVENUE
CITY: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DESCRIPTION: PROTEIN HYPOTHETICAL: YES ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
                                                                                                                                                                    182 GFV----LNLCV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: LINEAR
MOLECULE TYPE: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: NEW YORK
COUNTRY: U.S.A.
ZIP: 10016
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
97 TGLILSSFATSL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
US-09-995-007-2
                                                                                                                          206
                                                                                                                                                                                                                                                   221
                                                                                                                                                                                                                                                                                             322
                                                                                                                                                                                                                                                                                                                                      275
                                                                                                                                                                                                                                                                                                                                                                              373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 433
                                                                              유
                                                                                                                      ò
                                                                                                                                                           엄
                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                       ò
```

```
27;
                                                                                                                                                                                                   169
                                                                                                                                                                                                                                         74 VLGAIIGDWYDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWV-LTSC 132
                                                                                                                                                                                                                                                                                 -----WVILARG 209
                                                                                                                                                                                                                                                                                                                                              210 VILLGGPRNVLSLAQNHSRINLMDFDPDPRSRYTFWTFIVGGTLVWLSMYGVNQAQVQRY 269
                                                                                                                                                                                                                                                                                                                                                                                                         ----EDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVE 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                 --- 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----KLVFIS-KGLSFIY----GS 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DCITTGYAYTQGLSGSILSILMGASAITG---IMGTV----AFT--WLRRKCGL--VR 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           397 ACLTV------AALSSLIGGGVLQGSFTVMGVISGPLLGAFTLGMLLPACNTPGVL 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   372 TGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIY 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   432 M---SNGSNSANIVPETSPE----SVPIISVSLLFAGVIAARIGLWSFDLTVTQLL 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : : | : | : | : | : | : | : | : | TIGPPGATNASNGIPSSGMDTGRPALADIFYAISYLYYGALG-----TLTTML 536
                                                                                                                                                                                     ||:| || : || || : |:|
132 CGTL-QYLVAT--MLYTG-------IVIXAPALILNQVTGLDIWASLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVLGF
                                                                                                                                                             14 CGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVL
                                                                                                                       Gaps
                                                                             3.7%; Score 108; DB 10; Length 618;
19.1%; Pred. No. 0.26;
ative 71; Mismatches 160; Indels 204;
                                                                                                                                                                                                                                                                                                                     ---RDWIVVVAG----
                                                                                                                                                                                                                                                                                                                                                                                                                                             270 VACHTEGKAKLALL-----VNQL------GLFLIVASAAC-CG
INDIVIDUAL ISOLATE: SODIUM/IODIDE SYMPORTER SEQUENCE DESCRIPTION: SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       220 YVLLWKVYQK--TPALAVKAGLKEEETELKQLNLHKDTEPKP
                                                                                                                                                                                                                                                                               170 STGIİCTLYTTVGGMKAVVWİD--VFQVVVMLVĞF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5, 2003, 18:38:42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             359 INAMAAVTVEDLIKPRMPGLAPR-----
                                                                                                                                                                                                                                                                                                                       133 YILIITIANIANLASTATAITIQ--
                                                                           Query Match
Best Local Similarity 19.1%
Matches 103; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 completed: November
                         ;
US-09-995-007-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Search con
Job time
                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

This Page Blank (uspto)

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

- protein search, using sw model OM protein

November 5, 2003, 18:29:46; Search time 29 Seconds (without alignments) 1893.528 Million cell updates/sec Run on:

Title: Perfect score: Sequence:

US-09-715-927-6 2929 1 MTRAGDHNRQRGCCGSLADY......ACGPDAKEVRKENQANTSVV 571

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

283308 Total number of hits satisfying chosen parameters: 283308 segs, 96168682 residues Searched:

seq length: 0 seq length: 200000000 Minimum DB : Maximum DB :

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR 76:\*
1: pir1:\*
2: pir2:\*
3: pir3:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

113.5 3.9 522 2 5355 113.5 3.9 522 2 5355 112.5 3.8 435 1 565982 112 3.8 461 2 D70073 112 3.8 461 2 D70073 112 3.8 1148 2 H90175 111.5 3.8 473 2 G69789 111.5 3.8 679 2 D69329	Result No. 6	Score 612.5 509.5 509.5 509.5 1131.5 1133.5 118.5 118.5 119.5 119.5 111.5 111.5 113.5 113.5 113.5 113.5 113.5 113.5 113.5 113.5	HU	Len		1D 102499 102499 102499 101762 101762 101762 106926 106926 11318 11318 11318 11318 11318 11318 11318 11319 11319 11319 11319 11319 11319 11319 11319 11319 11319 11319 11319 11319 11319 11319	Description  hypothetical prote transporter like p protein R09BS.4 [i
112.5 3.8 435 2 5.720.7 112.5 3.8 304 2 883032 112 3.8 461 2 D70073 112 3.8 148 2 H90175 111.5 3.8 473 2 G69789 111.5 3.8 473 2 G69789 111.5 3.8 679 2 D69329		113.5 113.5		482 522 445	000	B69803 A31556 AB3070	metabolite transpo glucose transport
112 3.8 304 2 B83032 112 3.8 461 2 D70073 112 3.8 148 2 H90175 111.5 3.8 473 2 G69789 111.5 3.8 473 2 G69789 111.5 3.8 679 2 D69329	~	113 112.5		435 435	7	AF2079 S65982	hypothetical prote transport protein
112 3.8 1148 2 190175 111.5 3.8 403 2 884063 111.5 3.8 473 2 G69789 111.5 3.8 679 2 D69329	w 4	112		304	0.0	B83032	probable permease
111.5 3.8 403 2 E84063 111.5 3.8 473 2 G69789 111.5 3.8 679 2 D69329	ıп	112		1148	4 (7	H90175	Mecabolice cramspo NADH dehydrogenase
7 111.5 3.8 473 2 G69789 8 111.5 3.8 679 2 D69329 11.5 3.8 679 2 D69329		111.5	•	403	7	E84063	multidrug resistan
111.5 3.8 679 2 D69329		111.5	٠	2	0		sugar transporter
10/102 Y	, 20 0		•	۲,	7 0	932	conserved hypothet

٠. د

Indels 103; Gaps

Length 524;

Query Match 20.9%; Score 612.5; .DB 2; Best Local Similarity 29.1%; Pred. No. 6e-40; Matches 155; Conservative 95; Mismatches 179;

Dp ò q 8 g ò

ò

28 LYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNA 87

hypothetical prote	tetracycline-efflu	probablle protein	thyroid iodide tra	probable drug tran	metabolite transpo	hypothetical prote	hypothetical prote	hypothetical prote	conserved hypothet	hypothetical prote	sodium-dependent n	conserved hypothet	hypothetical prote		
G71008	H75515	C96758	S68513	H75577	E70070	. 91016D	F85860	G90013	A95044	D70551	F64464	B69308	H72265	S74444	AI2082
~	7	7	N	~	7	~	7	ď	N	N	~	N	~	~	~
310	407	539	618	698	457	547	547	397	410	445	492	684	390	427	435
3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
5.801	108.5	108.5	108	107.5	107	107	107	106.5	106.5	106.5	106.5	106.5	106	106	106
• •															

## ALIGNMENTS

_	RESULT 1	
	T02499	
	hypothetical protein At2g38460 [imported] - Arabidopsis thaliana	B
	N;Alternate names: hypothetical protein T19C21.5	
	C;Species: Arabidopsis thaliana (mouse-ear cress)	
	C;Date: 05-Mar-1999 #sequence_revision 05-Mar-1999 #text_change 16-Feb-2001	16-Feb-2001
	C;Accession: T02499; C84805	
	R;Rounsley, S.D.; Lin, X.; Ketchum, K.A.; Crosby, M.L.; Brandon, R.C.; Sykes, S.M.; Kaul	, R.C.; Sykes, S.M.; Kaul
_	submitted to the EMBL Data Library, August 1998	
_	A; Description: Arabidopsis thaliana chromosome II BAC T19C21 genomic sequence.	nomic sequence.
	A; Reference number: Z14676	
	A; Accession: T02499	
_	A;Status: translated from GB/EMBL/DDBJ	
_	AyMolecule type: DNA	
	A; Residues: 1-524 < ROU>	
	A;Cross-references: EMBL;AC004683; NID:q3395421; PID:q3395426	
	A, Experimental source: cultivar Columbia	
	R;Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.	Town, C.D.; Fujii, C.Y.;
	M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, L.	.; Umayam, L.; Tallon, L.
	euss. D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J	, Fraser, C.M.; Venter, J
	Nature 402, 761-768, 1999	
_	A; Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.	bidopsis thaliana.
	A; Reference number: A84420; MUID: 20083487; PMID: 10617197	
	www.a. A, Accession: C84805	
-	A;Status: preliminary	
	A, Molecule type: DNA	
	A; Residues: 1-524 <sto></sto>	
	A.Cross-references: GB:AE002093; NID:g3395426; PIDN:AAC28758.1; GSPDB:GN00139	GSPDB:GN00139
_	C;Genetics:	
_	A; Gene: At2g38460; T19C21.5	
_	A, Map position: 2	
	. A; Introns: 53/2; 169/2; 330/2; 387/3; 433/3; 470/3	
-		•

Db 371 SPLRTGVWSFWSQK	Query Match 17.4%; Score 509.5; DB 2; Length 551; Best Local Similarity 24.9%; Pred. No. 7.1e-32; Matches 143; Conservative 116; Mismatches 233; Indels 83; Gaps	1 MTRAGDINRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMHFAVSVFLVELYGNSLLL.	61 TAVYGLVVAGSVLVLGAIIGDMVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL  1	DD 152 IDAISFWIIV-CLULAMCICANNKEFINAEKFIIGKUWVMVL-GND-GILBSMNAAILDID 208  QY 181 DQLTNILAPWAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGIK 240  Db 209 DQCTNVILAPLYAVGINFRTYGIFGIASINGSMASKTIFLRAIYISNELLOVKKQKK 68	241 BETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHBLEHEQBPTCASQWAEPFRTFRDGWV 	QY 301 SYXNQPVELAGMGLAFLYMTVLGFDCITTGYAYTQQLSGSILSILMGASAITGIMGTVAF 360 :  -  -  -  -  -  -  -  -  -  -  -  -  -	361 TWLRRKCGLVRTGLISGLAQLSCLILCVISVEMPGSPLDLSVSPFEDIRSRFIGGESITP : : :	421 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLT	DD 397 TWWHDMVHSFDGNNATNDDFHVDWKHFSSDGVSLASIFVFLIALASAKIGLWCLDLA 453 QY 476 VTQLLQENVIESERGIINGVQNSMNYYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGH 535
EQEPTCASQWAEPFRTFRDGWVSYYNQP 306  TGNPPSRTGILVILDRMSKSSFVGAWRIYFNQE 313  CITTCYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRK 366  TLWISTLQWEGIPTYIIGIGRGISATVGLAATLVYPLMQSR 373  LCVISVYRPGSPLDISVSPFBDIRSRFIQGESITPTKIPEI 426  I	A; Nosiludes: 1-190 CBDV. A; Cossures: EMBL: AL162751 A; Experimental source: cultivar Columbia; BAC clone F12E4 C; Genetics: A; Map position: 5	/2; 165/2; 32 .370	Best Local Similarity 27.5%; Pred. No. 3.5e-36; Matches 153; Conservative 102; Mismatches 175; Indels 126; Gaps 12; Qy 28 LYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNA 87	OY 88 RLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIAN 144	145LASTATAITIORDMIVVVA-GEDRSKLANMNATIRRIDOLTNILAPMAVGOIMTFG 148 AIGVLSTLAGTVLIERDWVVWASEGHSPAVLTRMNSVIRGIDLSSKLLSPVITGLIISFV	Qy 200 SPVIGCGFISGWNLVSMCVEYVLLWKVYQKTFALAVKAGLKEEFELELKQLN 250	QY 251LHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPV 307  DD 268 VPLLHEEESYRNTQSRSRILRILERISBSSFVSAWRNYLNQEI 310	OY 308 FLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKC 367	OY 368 GLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEIT 427

```
A,Cross-references: EMBL:X16986; NID:g55511; PIDN:CAA34855.1; PID:g55512
R;Asano, T.; Shibasaki, Y.; Lin, J.L.; Akanuma, Y.; Takaku, F.; Oka, Y.
Nuclaic Acids Res. 17, 6386, 1989
A;Title: The nucleotide sequence of cDNA for a mouse liver-type glucose transporter prot A;Reference number: 805319; MUID:89366666; PMID:2771649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Residues: 1-105, 'D', 107-180, 'T', 182-326, 'T', 328-350, 'F', 352-431,' P', 433-523 <ASA>
A; Cross-references: EMBL:X15684; NID:g51090; PIDN:CAA33719.1; PID:g51091
A; Chornon, A.; Heyner, S.; Charron, M.J.; Copeland, N.G.; Gilbert, D.J.; Jenkins, N.A.; Th Development 113, 363-372, 1991
A; Title: Glucose transporter gene expression in early mouse embryos.
A; Reference number: A44887; MUID:92111400; PMID:1765007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Waeber, G.; Thompson, N.; Haefliger, J.A.; Nicod, P.
M. Biol. Chem. 269, 26912-26919, 1994
A;Title: Characterization of the murine high Km glucose transporter GLUT2 gene and its t
A;Reference number: A55078; MID:95014557; PMID:7929431
                                                                                                                14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           400
                                                                                                                                                                                                   144 NLASTATAITIQRDWIVVVAGEDRS-KLANMNATIRRIDQLTNILAPMAVGQIMTFGSPV 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203 IGCGFISGWNLVSMCVEYVLLWKVYQKTPAL--AVKAGLKEBETELKQLNLHKDTEPKPL 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----CETALIWLTHKFSSGVLDRPKCSLNSCSAEGSRTN----TDSIYI 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261 EGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMT 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --CSSVDIGMETIKLGWKEYIQQPVLPASLAYVLLYFN 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---GASA 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cispecies: Musuallus (house mouse)
Cispecies: Musuallus (house mouse)
Cispecies: 28-Feb-1990 #sequence revision 28-Feb-1990 #text_change 24-Sep-1999
CiAccession: 806920; 805319; B44887; 148367
CiAccession: 806920; 805319; B4887; 148367
Mucleic Acids Res. 17, 10099, 1989
Airlie: Sequence of the mouse liver glucose transporter.
Airlie: Sequence of the mouse liver glucose transporter.
Aireference number: 806920; MUID:90098776; PMID:2602116
                                                                                                                                                                                                                                                                        NARLKVAQTSLVVQNVSVIL-CGIILMMVFLHKHELLTMYHGWVLTSCYILIITAN-IA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IV----LTPGSLMTAFLTQRCMLLRLGPLLFFSAWMKIVINLARVFVLLPITLSNYGLCA
                                                                                                                                                               26 FLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDK
                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 384-431,'P',433-496 <HOG>
A;Cross-references: GB:S77926; NID:9242129; PIDN:AAB20847.1; PID:9242130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBIP:77927)
        A;Introns: 15/2; 86/3; 108/1; 179/3; 238/3; 263/3; 301/1; 396/2; 433/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351 ITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----SITW----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Note: sequence extracted from NCBI backbone (NCBIN:77926,
                                                                                                                                                                                                                                                                                                                                                                                                            :| |: : |: || || : || || stronganavlhridle.
                                                         Score 187.5; DB 2;
Pred. No. 8.5e-07;
1; Mismatches 157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    321 VLGFDCITTGYAYTQGLS-----GSIL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             glucose transport protein, hepatic - mouse NiAlternate names: GLUT 2 C;Species: Mus musculus (house mouse) C;Date: 28-Feb-1990 #sequence_revision 28-Fe
                                                                                                              71;
                                                            6.4%;
                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Experimental source: embryo
                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Molecule type: mRNA
Residues: 1-523 <SUZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   303 TKYHLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Accession: B44887
                                                                                                                84;
                                                            Query Match
Best Local S:
Matches 84
                                                                                                                                                                                                                                                                                                                                                                                                                                    221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        345
                                                                                                                                                                                                                                                                        98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          262
                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      업
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                    protein ROBF11.6 [imported] - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
R;anonymous, The C. elegans Sequencing Consortium.
Science 282, 2012-2018, 1998
A;Title: Genome Sequence of the nematode C. elegans: a platform for investigating biolog
A;Reference number: A75000; MUID:99065613; PMID:9851916
A;Note: see websites genome.wustl.edu/gsc/C_elegans/ and www.sanger.ac.uk/Projects/C_ele
A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
A;Status: preliminary
A;Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
A;Residues: 1-677 <syrb
A;Note: similar to mariner transposase
C;Genetics:
C;Genetics:
A;Map position: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
T01762
hypothetical protein A_IG002P16.6 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 19-Feb-1999 #sequence_revision 19-Feb-1999 #text_change 22-Oct-1999
C;Accession: T01762
R;Miller, N.; Beck, C.; Kramer, J.
Bubmitted to the EMBL Data Library, June 1997
A;Description: The sequence of A. thaliana IG002P16.
A;Reference number: Z14421
A;Accession: T01762
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-482 <MLL>
A;Cross-references: EMBL:AF007270; NID:g2191157; PID:g2191161; GSPDB:GN00063; ATSP:A_IGC
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRD----GWVS-YYNQP 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               613 TFCAAFGIALFYKTVMGFDNLAVGYA----TSASDLSVITIGALKSYGAVAGMVGVISYA 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    307 VFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSIL-MGA----SAITGIMGTVAFT 361
LITKEGMHQTLIVEGI---YSMLSLFSKLIFLSLTY--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135 LIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IMT-FG--SPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 677;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7.2%; Score 209.5; DB 2; llarity 26.1%; Pred. No. 2.5e-08; Conservative 47; Mismatches 72;
                                                                               536 IMYFRF-----AQNTLGNKLFACGPDAKEVRKENQ 565
                                                                                                                WLRRKCGLV 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             : | :: |::
FLEKRIGII 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: ATSP:A_IG002P16.6
A;Map_position: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 65; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                572
                           g
                                                                             ò
                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
```

```
R;Fukumoto, H.; Seino, S.; Imura, H.; Seino, Y.; Eddy, R.L.; Fukushima, Y.; Byers, M.G.; Proc. Natl. Acad. Sci. U.S.A. 85, 5434-5438, 1988
A;Title: Sequence, tissue distribution, and chromosomal localization of mRNA encoding a lakeference number: A31318; WUID:88289735; PMID:3399500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23;
                                           87 ARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLA 146
                                                                                                                                   205
                                                                                                                                                                 206 GFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPLEGTHL 265
                                                                                                                                                                                                                                                                                                                                      150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213
                                                                                                                                                                                                                                                                -----SYA 200
                                                                                                                                                                                                                                                                                                           321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGLAQLSCLI----LCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIYM 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----- 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESERGII 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330 LNGSNS----ILOLNTSDKYRGRV 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----WNL-----VSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKPL 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             493 NGVQNSMNYLLDLLHFIMVILAPN----PEAFGLLVLISVSFVAMGHIMYFRFAQNTL 546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        350 MSIYTLINAGTTPIGNLFVGAAMNIGGPYGFLLAGIVTAFLTTVFSIAYRNNAANTV 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Homo sapiens (man)
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 24-Sep-1999
C;Accession: A31318
                                                                          :| | |: || |: |:
|-----ITA--ILIFILATIGGLS
                                                                                                                                                                                                                                                                                                         266 MGVKDSNIHELEHEQEPTCASQMAEPFRIFRDGWVSYYNQPVFLAGMGLAFLYMTV---
22 IGQSISLMGTWLQR----TAEVWLLYTLTKSPLLLGSLSVFQFGPTLIFSVFSGAIVDRF
                                                                                                                               147 STATAITIQRDWIVVVAGEDRSKLANMWATIRRIDQLTNILAPMAVGQIM-TFGSPVIGC
                                                                                                                                                                                                                                                                                                                                                                                               322 -LGFDCITTGYAYTQGLSGSI-LSILMGASAITGIMGTVAFTWLRRK---CGLVR-TGLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41 MWHFAVSVFLV----ELYGNSL--LLTAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94 TSLVV---QNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANJANLASTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----IGEIAPTA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ------SQIIGLEFILG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:J03810; NID:g187133; PIDN:AAA59514.1; PID:g307125 C;Genetics: A;Gene: GDB:SLC2A2; GLUT2 A;Gene: GDB:SLC2A2; GLUT2 A;Cross-references: GDB:119995; OMIM:138160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
4.2%; Score 123.5; DB 2;
Best Local Similarity 20.3%; Pred. No. 0.095;
Matches 99; Conservative 69; Mismatches 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        177 FFI---NFLSYAAVLTGLFFIKOK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                299 SAIFQIVAAFSGNLYFTAVLVLGSGF---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Superfamily: glucose transport protein
Keywords: transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A, Map position: 3q26.2-3q27
C, Superfamily: glucose trans
C, Keyworda: trans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Accession: A31318
A;Molecule type: mRNA
A;Residues: 1-524 <FUK>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         211
                                                                                   d
                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                           ò
                                                                                                                                 8
                                                                                                                                                                     셤
                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .; Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.
Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium Clc
A;Reference number: A96900; MUID:21359325; PMID:21359325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               permease [imported] - Clostridium acetobutylicum
C;Species: Clostridium acetobutylicum
C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 14-Sep-2001
C;Accession: C96956
R;Nolling, J.; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.;
.; Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Residues: 1-409 < KUR>
A; Cross-references: GB: AE001437; PIDN: AAK78438.1; PID: 915023315; GSPDB: GN00168
A; Experimental source: Clostridium acetobutylicum ATCC824
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SNIHELEHEQEPTCASOMAEPFRIFRDGWVSYYNOPVFLAGM-GLAFLYMTVLGFDCITT 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIFQTAGISQPUYATIGVGAINMILTAVSVLLVEKAGRRTLFLTGMIG-MFFCTIFMSVG 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITT 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----IGPGPIPWFMV 422
A,Accession: 148367
A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Molecule type: DNA
A,Residues: 1-5 cRES>
A,Cross-references: EMBL:X78722; NID:g517486; PIDN:CAA55368.1; PID:g683589
C,Genetics:
C,Gueriamily: glucose transport protein
C,Superfamily: glucose transmembrane protein
                                                                                                                                                                                                                                                                                                             ELYGNSLLLTAVYGLVVAGSVL - - VLGAIIGDWV - DKNARLKVAQTSLVVQNVSVILCGI
                                                                                                                                                                                                                                                                                                                                                      ETEGSAHIVTMLWSLSVSSFAVGGWVASFFGGWLGDKLGRIK----AMLAAN-SLSLTGA
                                                                                                                                                                                                                                                                                                                                                                                                    ILM--MVFLHKHELLTMYHGWVLTSCYILLIT-----IANIANLASTATAITIQRDWIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG----WNL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---VSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPLEGTHLMGVKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23 LSAVPALLOCLLLEFCPESPRYLYIK--LEBEVRAKKSL-----KRLRGTEDV-TKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --INEMKKEKEREBASTEQKVSVIQLFTD---ANYROPILVALMLHMAQQFSGINGIFYYST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GYAYTQGLS-----GSILSILMGASA-----ITGIMGTVAFTWLRRKCG
                                                                                                                                                                                                                                                                                                                                                                                                                                            LLMGCSKFGPAHALIIA--GRSVSGLYCGLISGLVPMYIGEIA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EIYMSNGSNSANIVPETSPESVPIISVSL-------LFAGVI 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       423 AEFFSOGPRSTALALAAFSNWVCNFVIALCFOYIADFLGPYVFFLFAGVV 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.2%; Score 123.5; DB 2; Length 409;
llarity 18.8%; Pred. No. 0.069;
Conservative 73; Mismatches 191; Indels 173;
                                                                                                                                                                                                                                                                  Indels 139;
                                                                                                                                                                                                                            Length 523;
                                                                                                                                                                                                                         Score 131.5; DB 2;
Pred. No. 0.022;
67; Mismatches 158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LV---LLDKFAWMSYVSMTAIFLF------VSFFE
                                                                                                                                                                                                                       4.5%;
larity 22.6%;
Conservative 6
                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA
                                                                                                                                                                                                                       Query Match
Best Local Simi
Matches 106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAC0458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330
                                                                                                                                                                                                                                                                                                             22
                                                                                                                                                                                                                                                                                                                                                      84
                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                                                                                                                                                                                                                                                                                            139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene:
                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
```

::   ::   :   :   :   :   :     :	Oy 365 RKCGLVRTGLISGLAQL-SCLILCVISVFWPGSPLDLSVSPFEDIRŞRFIQGESITPTKI 423
QY 261 EGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGM-GLAFL 317	Db 345 IKTGLAEKPMGASWVQLYGVAILCGIGFTMSIFI-GLLSFPSDL 387 Qy 424 PEITTEIYMSNGS 436
QY 318 YMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISG 377    :	:  :  :    388 MQTETKIGVLSGS
378 LAQLSCLI	RESULT 10 514144 514144
374	nexose transport protein - Chioferia Ressieri C:Species: Chlorella Ressleri C:Date: 20-Feb-1995 #sequence revision 20-Feb-1995 #text change 24-Sep-1999
CY 421 TKIPEITTEIYMSNGSNSANIVPETSPEGVPIISVSLL 458	
Qy 459 FAGVIAA 465	A;Title: The Chlorella H(+)/hexose cotransporter gene. A;Reference number: S14144; MUID:91330335; PMID:1868571
Db 469 FAGVILIA 475	A;McCccston: Siring A;Mcscuber 1-534 <mol> A;Residues: 1-534 <mol> A:Cross-references: RMRL: X55149. NID.c18040: DIDN.CAA19016 1. DID.c18041</mol></mol>
RESULT 9 A13443	R;Sauer, N; Tanner, W. Friedrich V. Friedric
Na+/H+ antiporter 1 / proteinase IV (EC 3.4) [imported] - Brucella melitensis (strai	
c.baccesion: Al3443 C.Accession: Al3443 R.DelVecchio, V.G.: Kapatral, V.: Redkar, R.I.: Patra G.: Muior C.: Loc T.: Tuanous	A;Accession: S07096 A;Adjecule type: mRNA A;Decidien: 1.Es co 200 11 210 247 157 240 524 2011.
.; Mazur, M.; Goltsman, B.; Selkov, E.; Blzer, P.H.; Hagius, S.; O'Callaghan, D.; Letes Proc. Natl. Acad. Sci. H.S. A 99, 441-448	- w-
A; Title: The genome sequence of the facultative intracellular pathogen Brucella melitens A; AREference number: AD3252; PMID:11756688	
A;Accepton: A13113 A;Katus: prelimary A;Molecule type: DNA	C;Superiamily: glucose transport protein C;Keywords: sugar transport; transmembrane protein F:26-46/Domain: transmembrane #status prodicted <tm1.< td=""></tm1.<>
A;Residues: 1-763 <kur> A;Croserreferences: GBAE008917; PIDN:AAL52716.1; PID:g17983545; GSPDB:GN00190 A;Experimental source: strain 16M</kur>	F;88-108/Domain: transmembrane #status predicted <tm2> F;117-137/Domain: transmembrane #status predicted <tm3> F:1145-168/Domain: transmembrane #status predicted <tm3></tm3></tm3></tm2>
C;Genetics: A;Gene: BMEI1535 A;Map position: I	F;172-192/Domain: transmembrane #status predicted <tms> F;202-222/Domain: transmembrane #status predicted <tms> F;208-308/Domain: transmembrane #status predicted <tms> F;288-308/Domain: transmembrane #status predicted <tm7></tm7></tms></tms></tms>
Query Match  Query Match  4.1%; Score 120.5; DB 2; Length 763;  Best Local Similarity 21.5%; Pred, No. 0.26;	F;353-3747/DOMAIN: LiansMembrane #Bitarus predicted <tm9> F;358-373/Domain: transmembrane #Bitarus predicted <tm19> F;388-408/Domain: transmembrane #Bitarus predicted <tm10> F;447-447/Domain: transmembrane #Starus predicted <tm11></tm11></tm10></tm19></tm9>
Matches 93; Conservative 55; Mismatches 150; Indels 135; Gaps	F;457-477/Domain: transmembrane #status predicted <tm12></tm12>
<pre>Qy 55 GNSLLLTAVYGLVVAGSVLVLGAI-IGDWVDKNARLKVAQTS 95                                      </pre>	Query Match 4.0%; Score 118.5; DB 2; Length 534; Best Local Similarity 19.4%; Pred. No. 0.24; Matches 123; Conservative 90; Mismatches 213; Indels 207; Gaps 29;
QY 96 LVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILITIAN 141	QY 5 GDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHPAVSVFLVE 52                      5         1
Qy 142 IANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPWAVGQIMTFGSP 201 	LYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQ
QY 202 VIGGETSGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEBETELKQLN 250	Qy 94TSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIA-N 141
٠٠ ج	142 JANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAV-GQIMTFGS
F-LAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLR	201 PVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPL 

Db 231 DISKVLYTPMILARTGGNSEILGTVTTAAGIGGVIGAIALSIWGGFHRRIHGMLLGFIGH 290  Qy 368 GLVRTGLISGLAQLSCLILCVISVFMFGSPLDLSVSPFEDIRSRFIGGESITPTKIPEIT 427	Net, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, K.W.  A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.  A;Reference number: A86141; MUID:21016719; PMID:11130712  A;Returs: preliminary  A;Rocession: E86254  A;Returs: preliminary  A;Molecule type: DNA  A;Residues: 1-783 <sto>  A;Cross-references: GB:AE005172; NID:g3157932; PIDN:AAC17615.1; GSPDB:GN00141  C;Genetics:  A;Map position: 1  Query Match  Query Match  Query Match  A:0%; Score 117.5; DB 2; Length 783;  Best Local Similarity 19.4%; Pred: No. 0.47;  Matches 126; Conservative 103; Mismatches 241; Indels 179; Gaps 29;</sto>	11 ITSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVUGAIIG 8	Qy 121 LTMYHGWYLTSCYILITIANIANIASTATAITIQRDW 158  120 LVPUNWTSHGLQLAKLRNVTSSDIDKLSISNIENGSDSLYFGRFWTHLVWAYAFTPW 176  Qy 159 IVVVAGEDRSKLANMANTIRRIDQLTNILAPMAVQQIMTFGSPVIGCGFISG 210  177 TCYVLMKEYEKVAAMRLAFLQNEQRRPDQFTNLGLSQVLVRNVPADPDESISDSVE 236  Qy 211 -WNLVSMCVEYVLLWKYYQKTPALAVKAGLKEEFTELK -QLNIHKDTEPKPLEGTHLMG 267  11 -WNLVSMCVEYVLLWKYYQKTPALAVKAGLKEEFTELK -QLNIHKDTEPKPLEGTHLMG 267  237 HFPLVNHPDHYLTHQVYNANDLAALVEQKKSTQNWLDYYQLKYTRNQEHKPRIKTGFLG 296  Qy 268 VKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYXNQ 305  195 JG
Qy 318 YMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFT-WERKC 367  Db 248 CGTSEVDAEPADIVAÀVEIARPI-THROSWASLETRRXMPQLITSFVIQF- 296  Qy 318 YMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFT-WERKC 367  E	RESULT 11 AB2140 hypothetical protein all2673 [imported] - Nostoc sp. (strain PCC 7120) c;psecies: Nostoc sp. PCC 7120 c;bate: Nostoc sp. etrain PCC 7120 c;bate: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Dec-2002 c;Accession: AB2140 Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Iriguchi Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S DNA Res. 8, 205-213, 2001 A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Ana A;Reference number: AB1807; MUID:21595285; PMID:11759840	preliminary type: DNA type: DNA ferences: GB:BA000019; ental source: strain PCC file73 file73 file73 file73 file73 file73 file73	Pred. No. 0.2;   Mismatches 172;   WSVELVELYGNSILLTAVYS    WINWWDFLHKHELLTMYH    WOOTHWWPLHKHELLTMYH    WOOTHWWPLHKHELLTWYH    WOOTHWATIRIDOLTWH    WOOTHAILYLNQO-LOWWH    WOOTHAILYLNQO-LOWWH    WOOTHAILYLNQO-LOWWH    WOOTHAILYLNQO-LOWWH    WOOTHAILYLNQO-LOWWH    WOOTHAILYLNQO-LOWWSAN   WOOTHAILYLNGO-LOWWSAN   WOOTHAILYLNGO-LOWWSAN   WOOTHAILYLNGOWSYNG

```
A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans and A;Reference number: A83650; MUID:20512582; PMID:11058132
A;Accession: B83686
A;Accession: B83686
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-418 <STO>
A;Coss-references: GB:AP001508; GB:BA000004; NID:g10172890; PIDN:BAB04012.1; GSPDB:GNOC
C;Genetics:
A;Gene: BH0293
                                                                                                                                                                                                                                                                                                  27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  408
                                                                                                                                                                                                                                                                                                                                                                                                                             130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NILAPMAVGQIMTFGSPVIGCGFISGWNLVS-MC---VEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WVSYYNQPVFLAGMGLAFLYMTV---LGFDCITTGYAYTQGLSGSILSILMGASAITGIM 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :| : | : | : | : | : | : | BARAVVQEK---TDFDKIGRVMGMMSTASSGLIPLSYGMTSVALSLNLSISSILLYCGSF 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   409 RSRFIQGESITPTKIPEITTEIYMSNGSNSANIVPETSPESVPI-----ISVSLLFAG-- 461
                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                  71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein Y18D10A.23 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
C;Accession: T26524
                                                                                                                                                                                                                                                                                                                                                                                                                                                         72 RVLLM-MIGGVLADRFRRSTIMFCSLITR--SVLLFGMFIL-----QFLGVINIWTLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EEETELKQLNLHKDTEPKPLEGTHLMGVKD--SNIHELEHEQEPTCASQMAEPFRTFRDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LADYLTSAKFLL...---YLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAG
                                                                                                                                                                                                                                                                                                                                                                                17 LSSLLRNOKFLLLWVASIFSGLSFS----IYFLTKSWYVVDELGLKTFLGVVLMAMTVP
                                                                                                                                                                                                                                                                                                                                                                                                                           SVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131 SCYILIITI-----ANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122 GFAFCIGILDAFFWPANYAILPS----IVKKD-------HLTRANSFLQSTNHLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -DKPETKRL-----PSPL----KDLTEGYSYLRH--SPVLLSLM-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  356 GTVAFTWLRRKCGL-----VRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 294 N-----LRSKRGLLIIIRLTVMGVAIALLGQVVSLWQAIFVLAILGMGISIG-----DI
                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                  Indels 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Experimental source: clone Y18D10A
C;Ganetics:
                                                                                                                                                                                                                                                           Length 418;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 503;
                                                                                                                                                                                                                                                      Query Match 3.9%; Score 115.5; DB 2; Best Local Similarity 22.7%; Pred. No. 0.3; Matches 112; Conservative 71; Mismatches 177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.9%; Score 115; DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Harris, B.
submitted to the EMBL Data Library, December 1998
A;Reference number: 220226
A;Acession: T26524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Introns: 32/3; 98/3; 271/1; 340/1; 423/2; 441/1
      2000
      Nucleic Acids Res. 28, 4317-4331,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -VIAARIGLWSFD 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :: : | | | | VILFSFFVLWKFD 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-503 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: CESP: Y18D10A.23
                                                                                                                                                                                                                                                                                                                                         17
                                                                                                                                                                                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein BH0293 [imported] - Bacillus halodurans (strain C-125) C;Species: Bacillus halodurans C;Species: C;Date: 0.1 Dec-2000 #sequence_revision 01-Dec-2000 #text_change 15-Jun-2001 C;Accession: E83686 R;Takami, H.; Nakasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masul, N.; Fuji, F.; Hira
                                                                                                                                                                                                                                                                                                                                                                                  Chan-
                                                                                                   .
                                                                                                                                                                                                                                                                                   Dermease, multidrug resistance protein [imported] - Sulfolobus solfataricus Cispecies: Sulfolobus solfataricus Cispecies: Sulfolobus solfataricus Cispecies: Sulfolobus solfataricus Cispecies: Sulfolobus solfataricus Cispecies: 24-May-2001 #text_change 06-Jan-2003 Ciscession: C90446

RiShe, Q.; Singh, R.K.; Confalonieri, F.; Zivanovic, Y.; Allard, G.; Awayez, M.J.; Chan Jong, II. Juffries, A.C.; Kozera, C.J.; Medina, N.; Peng, X.; Thi-Ngoc, H.P.; Redder, arrett, R.A.; Ragan, M.A.; Sensen, C.W.; Van der Oost, J.
Albescription: Sulfolobus solfataricus complete genome.

A;Reference number: A99139
A;Accession: C90446
A;Accession: C90446
A;Accession: L90446
A;Residues: 1-469 <KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21;
                       513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A)Cross-references: GB:AE006641; NID:g13816035; PIDN:AAK42826.1; GSPDB:GN00155 C;Genetics: A;Gene: SSO2716 C;Superfamily: multidrug-efflux transporter
                                                                   494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68 VAGSVLVL--GALIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYH 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GWVLTSCYILLITIANIANLASTATAITIORDWIVVVAGEDRSKLANMNATIRRIDQLTN 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            157 GWQ----YIRYINV------PIGI----VAVLLGV--MNIKDINKVNIKLDMLGA 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ILAPMAVGQIMTFGSPVIGCGFISGWNLVSMC----VEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EPFRTFRDGWVSYYNQPVFLAGMGLAFLYMT-VLGFDCITTGYAYTQGLSGSILSILMGA 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | | | | :: | :|| | | :::| 305 SILAPFM-GRVADRGKPGIVAGIGLMFIFITMILYFFLLTPTTDY------YLIVGI 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SAITGIMGTVAFTWLRRKCGLV-----RTGLISGLAQ----LSCLILCVISVFMPGSPL 398
ETSPESVPIISVSLL-----FAGVIA--ARIGLWSFDLTVTQLLQENVIESERGIING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EEETELKQLNLHKDTEPKPLEG------THLMGVKDSNIHELEHEQEPTCASQMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92;
                                                                                                                                                                        495 VONSMNY-----LLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMY 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 469;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch
1 Similarity 22.7%; Pred. No. 0.32;
88; Conservative 64; Mismatches 143; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399 DLSVSPFE------DIRSRFIQG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRSVA-FEIFIGITILNGDVSVTFVNG 438
                                                              444
                                                                                                     514
                                                                                                                                                                                     574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loc
Matches
                                                                                                                                                                                                                                                  RESULT 13
                     유
                                                                                               g
                                                                                                                                            ઠ
                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

Search completed: November 5, 2003, 18:36:42 Job time : 32 secs

November 5, 2003, 18:24:46 ; Search time 19 Seconds (without alignments) 1413.276 Million cell updates/sec GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd. OM protein - protein search, using sw model Run on:

US-09-715-927-6 2929 1 MTRAGDHNRQRGCCGSLADY.....ACGPDAKEVRKENQANTSVV 571 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

127863 segs, 47026705 residues Searched:

127863 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt\_41:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	P14246 mus musculu	homod				bacillu		P46358 xanthomonas	Q63008 rattus norv		P33941 escherichia	P43427 rattus norv	cavia	gallus	rattus	ratt	P53794 homo sapien	mus	-		P08663 staphylococ	_		Q57341 haemophilus		_		_		squal	11169	2609 esche	P52352 human herpe
SUMMARIES	ID	GTR2 MOUSE	GTR2 HUMAN	HUP1 CHLKE	YFIG_BACSU	GTR2_RAT	YYBO_BACSU	CSBC_BACSU	RFAY_XANCP	SL55_RAT	YD19_METJA	YOJI ECOLI	GTRS_RAT	A2AC_CAVPO	GTR2_CHICK	HH2R_RAT	SLS6_RAT	SL53_HUMAN	P11D_MOUSE	YWFF_BACSU	ARSB_YEREN	MERA_STAEP	A2AC_MOUSE	A2AC_RAT	AFUB_HAEIN	DTD_HUMAN		UIDB_ECOLI	CIW2_MOUSE	YM81_MYCTU	NU4M_SQUAC	GTR3_HUMAN		VGLB_HSV7J
	DB	-	-	Н	-	Н	н	Н	н	-	Н	-	m	Н	Н	Н	П	П	П	Н	Н	ч	-		Ģ	Н	<del>, -</del> i	Н	н	Н		н	-	н
	Query Match Length	52	524	534	482	522	435	461	400	618	492	547	203	455	533	358	634	718	1043	394	429	547	458	458	632	739	971	.457	411	552	460	496	472	822
₩	Query		•	•	•	9.6	•	3.7		٠	•	٠		м Э	٠	٠	3.5	٠		٠	٠				٠	٠	٠				3.4	3.4	3.4	3.4
	Score	126.5	123.5	118.5	113.5	113.5	112.5	109.5	108.5		106.5	106	104.5	103.5	103.5	103	103	103	103	102.5	102.5	102	101.5	101.5	101.5	101.5	101.5		0	100.5	99.5	99.5	98.5	98.5
	Result No.	г	8	м	4	2	9	7	ω	on i	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	52	26	27	58	53	30	31	32	33

P18825 homo sapien P03819 escherichia Q48624 leuconostoc P53793 bos taurus P97046 lactococcus P25316 saccharomyc Q9jis4 rattus norv Q12564 ampelomyces P97292 mus musculu O79881 sus scrofa O87712 coxiella bu Q9m3j4 spinacia ol
AZAC HUMAN KEFC_ECOLI LACY_LEULA SL53 BOVIN LMRA_LACLC KNHA YEAST CHSA_AMPQU HH2R MOUSE NU4M_PIG DNAK_COXBU NU5C_SPIOL
епппппппппппппппппппппппппппппппппппппп
462 639 639 718 718 1047 1047 538 918 959 7459
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
99 99 99 99 99 99 99 99 99 99 99 99 99
4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

## ALIGNMENTS

REBULT 1  OTTAL MOUSE  OTTAL MO
--

```
GTR2 HUMAN
                                                  CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                           52
  DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                        183
                                                                                                                                         Query Match
Best Local S
                                       CARBOHYD
                                                                                                                SEQUENCE
                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 2
GTR2_HUMAN
                                                                                                                                                                  Matches
  d
                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                 glucose transporters are differentially expressed in early
postimplantation mouse embryos.";

postimplantation mouse embryos.";

Development 116:555-561(1992).

Development 116:555-561(1992).

- FUNCTION: FACILITATIVE GLUCOSE TRANSPORTER. THIS ISOFORM LIKELY
MEDIATES THE BIDTRECTROMAL TRANSFER OF GLUCOSE ACROSS THE PLASNA
MEDIATES THE BIDTRECTROMAL TRANSFER OF GLUCOSE SENSING
MECHANISM OF THE BETA CELLS, MAY COMPRISE PART OF THE GLUCOSE-SENSING
MECHANISM OF THE BETA CELL. MAY ALSO PARTICIPATE WITH THE
NA(+)/GLUCOSE COTRANSPORTER IN THE TRANSFORT OF
GLUCOSE IN THE SHALL INTESTINE AND KIDNEY.

-!- SUBCELLULAR LOCATION: INTESTINE AND KIDNEY.

-!- SUBCELLULAR LOCATION: INTESTINE MENDIANE PRODERM LAYER OF
YOLK SAC AND LIVER PRIMORDIUM.

-!- SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY. GLUCOSE
TRANSPORTER SUBFAMILY.
                                                                                    MEDLINE=93170163; PubMed=1289053;
Smith D.E., Gridley T.;
"Differential screening of a PCR-generated mouse embryo CDNA library:
Hogan A., Heyner S., Charron M.J., Copeland N.G., Gilbert D.J., Denkins N.A., Thorens B., Schultz G.A.; "Glucose transporter gene expression in early mouse embryos."; Development 113:363-372(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AKO05068 BABB3792.1; -.
EMBL; AKO05068 BABB3792.1; -.
EMBL; AKO05068 BABB3792.1; -.
EMBL; S06920; S06920;
EMBL; S06920; S06920;
EMBL; ERROUS BABB3792.1; -.
EMBL; ERROUS BBB SUD_transporter.
InterPro; IPR005629; Sug_transporter.
InterPro; IPR005629; Sug_transporter.
INTERPRO; IRR00363; Sugar_tr; 1.
ERINTS; PR00171; SUGATRNSPORT.
ITGRAMS; ITGR00879; SP; 1.
FROSITE; PS00217; SUGAR_TRANSPORT.
ITGRAMS; TIGRO0879; SUGAR_TRANSPORT.
ITGRAMS; TIGROS BABB3792, SUGAR_TRANSPORT.
ITGRAMS; TIGROS BABB37024; SUGAR_TRANSPORT.
ITGRAMS ITGROS BUGAR_TRANSPORT.
ITGRAMS ITGRAMS ITGRAMS ITGRAMS BUGAR_TRANSPORT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EXTRACELLULAR (POTENTIAL)

4 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
11 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6 (POTENTIAL).
CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; X16986; CAA34855.1; -. EMBL; X15684; CAA33719.1; -. EMBL; S77926; AAB20847.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE SPECIFICITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Multigene family DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             359
368
368
402
423
                                                                            STRAIN=C57BL/6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
```

```
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      269 TKD--INEMKKEKEEEASTEQKVSVIQLFTD---ANYRQPILVALMLHMAQQFSGINGIFY 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420 FMVAEFFSQG------PRPTALALAAFSNWVCNFVIALCFQYIADFLGPYVFFLFAGVV 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109 ILM--MVFLHKHELLT------MYHGWV--LTSCYILIITIANIANLASTATAITIQRD 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139 LLMGCSKFGPAHALIIAGRSVSGLYCGLISGLVPMY-----IGEIAPTT----- 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158 WIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG----WNL 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----SQIAGLSFILGUALVTGILI-----SQIAGLSFILGNQDHWHI 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     214 -----VSMCVEYVLLWKVYQKTPALAVKAGLKEEBTBLKQLNLHKDTEPKPLEGTHLMG 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            268 VKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGM-GLAFLYMTVLGFDC 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     327 ITTGYAYTQGLS-----GSI----LSILMGASA-----ITGIMGTVAFTWLRR 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               324 YSTSIFQTAGISQPVYATIGVGAINMIFTAVSVLLVEKAGRRTLFLTGMIG-MFFCTIFM 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        366 KCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPE 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     383 SVGLV---LLDKFAWMSYVSMTAIFLF-----VSFFE-----IGPGPIPW 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220 LLGLSAVPALLQCLLLLFCPESPRYLYIK--LEEEVRAKKSL-------KRLRGTEDV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ELYGNSLLLTAVYGLVVAGSVL--VLGAIIGDWV-DKNARLKVAQTSLVVQNVSVILCGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----VSLLFAGVI
                                                                                                                                                                                                                                                                                                                                                                                                  Indels 159; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Kidney, and Liver;
TISSUE-Kidney, and Liver;
MEDLINE-88289735; PubMed=3399500;
Fukumoto H., Seino S., Imura H., Sieno Y., Eddy R.L., Fukushima Y.,
Fukumoto H., Shows T.B., Bell G.I.;
"Sequence, tissue distribution, and chromosomal localization of mRNA encoding a human glucose transporter-like protein.";
Proc. Natl. Acad. Sci. U.S.A. 85:5434-5438 (1988).
--i- FUNCTION: FACILITATIVE GLUCOSE TRANSPORTER. THIS ISOFORM LIKELY MEDIATES THE BIDIRECTIONAL TRANSFER OF GLUCOSE ACROSS THE PLASMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUL-1989 (Rel. 11, Created)
01-JUL-1989 (Rel. 11, Last sequence update)
01-JUL-1980 (Rel. 11, Last sequence update)
Solute carrier family 2, facilitated glucose transporter, member (Glucose transporter type 2, liver).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                         .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                         Length 523;
                         12 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
N-LINKED (GLCNAC. . .) (POT)
G -> D (IN REF. 2).
T -> N (IN REF. 1).
S -> T (IN REF. 1).
F -> L (IN REF. 1).
F -> L (IN REF. 1).
F -> L (IN REF. 1).
W, F12B5376CBDB5F63 CRC64;
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     426 ITTELYMSNGSNSANIVPETSPESVPIIS-------
                                                                                                                                                                                                                                                                                                                                         4.3%; Score 126.5; DB 1; 22.3%; Pred. No. 0.11;
                                                                                                                                                                                                                                                                                                                                                                                                  68; Mismatches 146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                            57106 MW;
                                                                                                                                                                                                                                                                                                                                                                                                      107; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
460
481
523
62
106
106
181
181
327
432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                            523 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SLC2A2 OR GLUTZ
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
MEMBRANE OF HEPATOCYTES AND IS RESPONSIBLE FOR UPTAKE OF GLUCOSE BY THE BETA CELLS; MAY COMPRISE PART OF THE GLUCOSE-SENSING MECHANISM OF THE BETA CELL. MAY ALSO PARTICIPATE WITH THE NA (+)/GLUCOSE COTRANSPORTER IN THE TRANSCELLULAR TRANSPORT OF GLUCOSE IN THE SMALL INTESTINE AND KIDNEY.
SUBCELLULAR LOCATION: Integral membrane protein.
INSUE SPECIFICITY: LIVER, INSULIN-PRODUCING BETA CELL, SMALL INTESTINE, AND KIDNEY.
SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY. GLUCOSE TRANSPORTER SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Provided the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
12 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FTIG=VAR 007169.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     I (FOIENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GO, GO: 0005887; C:integral to plasma membrane; TAS. GO; GO: 000524; C:membrane fraction; TAS. GO; GO: 0005355; F:glucose transporter activity; TAS. GO; GO: 0005975; P:carbohydrate metabolism; TAS. GO; GO: 0015758; P:glucose transport; TAS. InterPro; IPRO07114; MFS. InterPro; IPRO05828; Sug_transporter. InterPro; IPRO05829; Sug_transporter. InterPro; IPRO03639; Sug_transporter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /FTId=VAR 014718.

\Gamma -> I (IN dbSNP:5400).

/FTId=VAR 014719.

L -> V (IN dbSNP:5397).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                              EMBL, J03810; AAAS9514.1; -. PIR, A31318, A31318. Genew; HGNC:11006; SLC2A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1119
127
148
158
179
179
208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GK; P11168; -
MIM; 138160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
```

```
420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           458
                                                                                                                                          96 LWSLSYSSFAVGGMTASFFGGWLGDTLGRIKAMLVANILSLVGALLMGF-----SKLGP 149
                                                                                                                                                                         94 TSLVV---QNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLASTAT 150
                                                                                                                                                                                                        150 SHILIIAGRSISGLYCGLI-----SGLVPMY-------IGEIAPTA- 183
                                                                                                                                                                                                                                       151 AITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG 210
                                                                                                                                                                                                                                                                                                   211 ----WNL-----VSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPL 260
                                                                                                                                                                                                                                                                                                                                                                 261 EGTHLMGVKD--SNIHELEHEQEPTCASQMAEPFRIFRDGWVSYYNQPVFLAGM-GLAFL 317
                                                                                                                                                                                                                                                                                                                                                                                   ----LRGYDDVTKDINEMRKEREEASSEQKVSIIQLFTN---SSYRQPILVALMLHVAQQ 315
                                                                                                                                                                                                                                                                                                                                                                                                                              318 YMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISG 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                416 GPIPWFMVAEFFSQG-----PRPAALAIAAFSNWTCNFIVALCFQYIADFCGPYVFFL 468
                                                                                                            93
                                                                                                                                                                                                                                                          374 SGMFVCAIFMSVGLVLLNKFSWMSYVSMIAIF-----LFVSFFE-----IGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Chlorophyta; Trebouxiophyceae; Chlorellales;
Chlorellaceae; Chlorella.
                                                                                                          41 MWHFAVSVFLV----ELYGNSL--LLTAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --- LCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISA
                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The hexose carrier from Chlorella. cDNA cloning of a eucaryotic H+-
                                                                             Indels 169;
                                               Length 524;
. /FTId=VAR 014720.
57489 MW; DA600577207EC083 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wolf K., Tanner W., Sauer N.;
"The Chlorella H+/hexose cotransporter gene.";
Curr. Genet. 19:215-219(1991).
-! FUNCTION: ACTIVE UPTAKE OF HEXOSES.
-! SUBCELLULAR LOCATION: Integral membrane protein.
-! INDUCTION: By glucose.
                                                                             69; Mismatches 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P15686; Q39523;
01-APR-1990 (Rel. 14, Created)
15-UUL-1998 (Rel. 36, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
                                              4.2%; Score 123.5; Di
20.3%; Pred. No. 0.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TKIPEITTEIYMSNGSNSANIVPETSPESVPIIS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      534 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=91330335; PubMed=1868571; Wolf K., Tanner W., Sauer N.; "The Chlorella H+/hexose cotranspo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=90092536; PubMed=2599110; Sauer N., Tanner W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H(+)/hexose cotransporter 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TEBS Lett. 259:43-46(1989)
                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             378 LAQLSCLI-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      459 FAGVIAA 465
                  524 AA;
                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chlorella kessleri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [2]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI TaxID=3074;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cotransporter.
                                                                             66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHLKE
                                          Query Match
Best Local S
                SEQUENCE
                                                                                                                                                                                                                                                                     184
                                                                                                                                                                                                                                                                                                                                                                                                263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHLKE
                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUP1
                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠ
                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacillus subtilis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=1423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    YFIG BACSU
P54723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                          BACSU
                                                                                                                                                                                                                                                                                                                                                                                                                                          YFIG
                                                                                              엄
                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                   ò
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                      ò
                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --TSLVVQNVSVILCGIILM------MVFLHKHELLTMYHGWVLTSCYILIITIA-N 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71 EVHEDSPYCTYDNAKLQLFVSSLFLAG---LVSCLFASWITRNWGRKVTMGIGGAFFVAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GDYR-----GGLTVYVVMVAFMAACGGLLLGYDNGVTGGVVSLBAFEKKFFPDVWAKKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAV-GQIMTFGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           188 IAGLVNYAV----RDW-----ENGWRLS-------LGPAAAPGAILFLGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVE------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----LYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 213; Indels 207;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1; Length 534;
                                                                                                                                                                                                                                                                                                   Transmembrane, Transport, Sugar transport, Symport, Repeat, Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CYTOPLASMIC (POTENTIAL).
MISSING (IN REF. 1).
P -> L (IN REF. 1).
C -> R (IN REF. 1).
4, 38238E8710AA2237 CRC64;
SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
12 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                         1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                          EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                         CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
11 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 (POTENTIAL).
CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.0%; Score 118.5; Di
19.4%; Pred. No. 0.41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                 PROSITE; PS00216; SUGAR TRANSPORT 1; 1.
PROSITE; PS00217; SUGAR TRANSPORT 2; 1.
                                                                                                                                                                               InterPro; IPR007114; MFS.
InterPro; IPR005829; Sub transporter.
InterPro; IPR005829; Sug transporter.
InterPro; IPR003663; Sugar transpot.
Pfam; PF000083; sugar tr; 1.
Pfam; PR000171; SUGRTNSPORT.
IIGRFAMS; TIGR00879; SP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          57522 MW;
                                                                                                                                        EMBL; Y07520; CAA68813.1; -. EMBL; X55349; CAA39036.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR; S14144; S14144.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            248
534 AA;
                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142
                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                          FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
```

g

8 8 8

g

ò

```
317
                                                                                                                    247
                                                                                                                                                                                                                                                                                                                       248 CGTSEVDAEFADI-----VAAVEIARPI-TMROSWASLFTRRYMPQLLTSFVIQF- 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               353
PVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPL 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          318 YMTVLGFDCI------TTGYAYTQGLSGSILSILMGASAITGIMGTVAFT-WLRRKC 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     418 ITPTKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  478 QLLQENVIESERGIINGVQNSMNYLLDLLHF----IMVILAPNPEAFGLLVLISVSFVA 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            445 QAFVSMLCAMEYGV------FLFFAGWLVIMVLCA-----IFLLPETKGVP 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIATOR 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STATE 18. STA
                                                                                                                    ----PESPNFLVEKGKTEKGREVLÓ------KL
                                                                                                                                                                                                                                        261 EGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQ---PVFLAGMGLAFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               297 FOOFTGINAIIFYVPVLFSSLGSANSAAL---LNTVVVGAVNVGSTLIAVMFSDKFGRRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368 GLVRTGLISGLAQLSCLILCVISVFMPGS-PLDLSV-SPFEDIRSRFIQGES-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yamamoto H., Uchiyama S., Fajar A.N., Ogasawara N., Sekiguchi J.;
"Determination of a 12 kb nucleotide sequence around the 76 degrees
region of the Bacillus subtilis chromosome.";
Microbiology 142:1417-1421(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Firmicutes; Bacillales; Bacillaceae; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-1996 (Rel. 41, Last annotation update)
Hypothetical metabolite transport protein yfig.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      533 MGHIMYFRFAQNTLGNKLFACGPDAKEVRKENQ 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485 IERVQAL-YARHWFWNRVM--GPAAAEVIAEDE 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    482 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=96262713; PubMed=8704981;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                          222 LVL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [2]
SEQUENCE FROM N.A.
```

126 AVGCASVTVPTFLAEISPAËRKGRIVTQNBLMIVİGĞİLAYTFNAIIĠSTMGESANV---206 GFISGWN--LVSMCVEYVLLW---KVYQKTPA-LAVKAGLKEBETELKQLNLHKDTEPKP

셤

8

ò

146 ASTATAITIQRDWIVVVAGEDRSKLANWNATIRRIDQLTNILAPMAVGQIMTFGSPVIGC 205

87 HGRRK------TILYLALLFIAATL---

--- GCTFSPNASVMIAFRFLLGL 125

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
Rieger M., Rivolta C., Rocha E., Roche B., Rose M., Sadaie Y., Sato. Schleich S., Schloeter R., Sochfone F., Schleich S., Schloeter R., Sochfone F., Skriguchi J., Sekweska A., Seror S.J., Serror P., Shin B.S., Soldo B., Sorokin A., Tacconi E., Takagi T., Takahashi H., Takemaru K., Takeuchi M., Tamakoshi A., Tamaka T., Terpstra P., Tognoni A., Tosato V., Uchiyama S., Vandenbol M., Vannier P., Vassarotti A., Viari A., Mambutt R., Wedler E., Wedler H., Weitzenegger T., Winters P., Winget A., Zamamoto H., Yamane K., Yasumoto K., Yata K., Yoshida K., Yoshikawa H.F., Zumstein E., Yoshikawa H.F., Zumstein E., Yoshikawa H., Danchin A., The Complete genome sequence of the Gram-positive bacterium Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Complete proteome.
                                                                                                                                                                        Nature 390:249-256(1997).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Probable).
-!- SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90851C4F4C48EE01 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                     Subtilist; BG1854; yfig.
InterPro; IPR007114; MFS.
InterPro; IPR007114; MFS.
InterPro; IPR005828; Sug_transporter.
InterPro; IPR005829; Sug_transporter.
InterPro; IPR005829; Sugar_transpt.
Pfam; PF00083; Sugar_tr; 1.
PRINTS; PR00171; SUGATRNSPORT.
TIGRPAMS; TIGRO0879; SP; 1.
PROSTTE; PS00216; SUGAR_TRANSPORT_1; FALSE_NEG.
PROSTTE; PS00216; SUGAR_TRANSPORT_2; 1.
PROSTTE; PS00217; SUGAR_TRANSPORT_2; 1.
PROSTTE; PS00217; SUGAR_TRANSPORT_2; 1.
PROSTTE; PS00217; SUGAR_TRANSPORT_2; 1.
PROMAIN 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 (POTENTIAL)
CYTOPLASMIC (P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52756 MW;
                                                                                                                                                                                                                                                                                                                                                                         EMBL; D50543; BAA09111.1; -.
EMBL; Z99108; CAB12655.1; -.
PIR; B69803; B69803.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
20
20
30
30
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            373
400
421
423
444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          482 AA;
                                                                                                                                                            subtilis."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                            276 QITGVNSIMYYGTEILREAGFQTEAALIGNI-----ANGVISVIAVIFGIWLLGKVRRR 329
       -----WRYMLVIATLPAVVLWFGMLIVPESPRWLAAKGRMGDALRVLRQ--IREDSQAQ- 234
                                                                             260 LEGTHLMGVKDSNIHFLEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYM 319
                                                                                                                                               -------QBIKEIKHAIEGTAKK---AGFHDFQEPWI----RRILFIGIGIA-IVQ 275
                                                                                                                                                                                                           320 TVLGFDCI-----TTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWL----RRK 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-CT-1989 (Rel. 12, Created)
01-CT-1989 (Rel. 12, Last annocation update)
28-PEB-2003 (Rel. 41, Last annocation update)
28-PEB-2003 (Rel. 41, Last annocation update)
Solute carrier family 2, facilitated glucose transporter, member 2
Glucose transporter type 2, liver).
SLC2A2 OR GLUT2 OR GLUT-2.
Rattus norvegicus (Rat).
Rattus norvegicus (Rat).
Rattus Last Betheria; Rodentia; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=89003066; PubMed=3048704;
Thorens B., Sarkar H.K., Kaback H.R., Lodish H.F.;
"Cloning and functional expression in bacteria of a novel glucose transporter present in liver, intestine, kidney, and beta-pancreatic islate cells.";
Cell 55:281-290(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- FUNCTION: FACILITATIVE GLUCOSE TRANSPORTER. THIS ISOFORM LIKELY MEDIATES THE BIDIRECTIONAL TRANSFER OF GLUCOSE ACROSS THE PLASMA MEDIATES THE BIDIRECTIONAL TRANSFER OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUCOSE OF GLUC
                                                                                                                                                                                                                                                                                                                                                   367 CGLVRTGLISGLAQLSCLILCVISVFMPGSP 397
                                                                                                                                                                                                                                                                                                                                                                                      330 PMLI-IGQIGTMTAL--LLIGILSIVLEGTP 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; A31556; A31556.
InterPro; IPR007114; MFS.
InterPro; IPR006828; Sub_transporter.
InterPro; IPR005829; Sug_transporter.
InterPro; IPR003663; Sugar_transpt.
Pfam; PF00083; sugar_transpt.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; J03145; AAA41298.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD:
          183
                                                                                                                                            235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTR2 RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 5
GTR2_RAT
                                                                                                                                        셤
                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                         ò
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                           ò
```

19;

NARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANL 145

98

ò

셤

ò

::

3.9%; Score 113.5; DB 1; Length 482; 19.7%; Pred. No. 0.83; ive 73; Mismatches 154; Indels 87; Gaps

Best Local Similarity 19.7 Matches 77; Conservative

Query Match

Ź

STANDARD;

```
STRAIN=168;
  BACSU
                                                                                                                                                                                                                                                                                                                                                                                                                                     ELYGNSLLLTAVYGLVVAGSVL--VLGAIIGDWV-DKNARLKVAQTSLVVQNVSVILCGI 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158 WIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG----WNL 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----LRGALGTLHQLALVTGILI-----SQIAGLSFILGNODYWHI 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     219 ILGLSAVPALLQCLIL--LFCPESPRYLYINLEEEVRAKKSL------KRLRGTEDI- 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGM-GLAFLYMTVLGFDC 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         268 TKD--INEMRKEKEEASTEOKVSVIQLFTD---PNYROPIVVALMLHLAQQFSGINGIFY 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327 ITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISG-LAQLSCLI 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            386 LCVISV------FMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIYMSNG 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ILM--MVFLHKHELLT-----MYHGWV--LTSCYILIITIANIANLASTATAITIQRD 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----VSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKPLEGTHLMG
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----VSLLFAGVI 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65; Mismatches 164; Indels 139;
                                                                                                                                                                                                                                                                                                                                                                                    / Match 3.9%; Score 113.5; DB 1; Length 522; Local Similarity 21.7%; Pred. No. 0.91;
                                       Transmembrane; Sugar transport; Transport; Glycoprotein; Multigene family.
                                                                                                                                                                                                                                                               9 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                           3 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                              EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                       N-LINKED (GLCNAC. . .) (P
075AB81E56CF33F7 CRC64;
                                                                               1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                  EXTRACELLULAR (POTENTIAL)
                                                                                            TRACELLY (POTENTIAL).
                                                                                                                                                 4 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                              8 (POIENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                            CYTOPLASMIC (POTENTIAL).
                                                                     CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                       CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                     10 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                  (POTENTIAL).
                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                           (POTENTIAL)
PRINTS; PRO0171; SUGRTRNSPORT.
TIGREAMS; TIGRO0879; SP; 1.
PROSITE; PS00216; SUGAR_TRANSPORT_1; 1.
PROSITE; PS00217; SUGAR_TRANSPORT_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        436 SNSANIVPETSPESVPIIS-----
                                                                                                                                                                                                                                                                                                                                                                  57085 MW;
                                                                                                                                                                                                                                                                                                                                                                                                              Matches 102; Conservative
                                                                                                                                                                                 62
522 AA;
                                                                                                                                                                                                                                                                                                                      DOMAIN
TRANSMEM
                                                                                                                                                                                            TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                           DOMAIN
TRANSMEM
                                                                                                                DOMAIN
TRANSMEM
                                                                                                                                                                                                                              DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                     25
                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        214
                                                                              TRANSMEM
                                                                                                      FRANSMEM
                                                                                                                                                           DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                           RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                               FRANSMEM
                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                  DOMAIN
                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                     DOMAIN
                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                 DOMAIN
   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

RESULT 6 YYBO\_BACSU

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                          RA Kunst F., Ogsawara N., Moszer I., Albertini A.M., Alloni G.,
RA Azevedo V., Bertero M.G., Bessieres P., Bolotin A., Borchert S.,
RA Azevedo V., Bertero M.G., Bessieres P., Bolotin A., Borchert S.,
RA Brouillet S., Bruschi C.V., Caldwell B., Capuano V., Carter N.M.,
RA Choi S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A.,
RA Denizot F., Devine K.M., Dusterhoff A., Ehrlich S.D., Emmerson P.T.,
RA Entian K.D., Errington J., Fabret C., Ferrari E., Foulger D.,
RA Entiaseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A.,
RA Hilbert H., Holsappel S., Hosono. S., Hullo M.F., Itaya M., Jones L.,
RA Hilbert H., Holsappel S., Hosono. S., Hullo M.F., Itaya M., Jones L.,
RA Joris B., Karamata D., Kasahara Y., Klaerr-Blanchard M., Klein C.,
RA Murita K., Levine A., Liu H., Masuda S., Mauel C., Medigue C.,
RA Moone D., O'Reilly M., Ogawa K., Ogiwara A., Oudega B., Park S.H.,
RA Parro V., Pohl T.M., Portetelle D., Porvollik S., Prescott A.M.,
RA Rieger M., Rivolta C., Rocha E., Roche B., Rose M., Sadaie Y.,
Scanlan E., Scileich S., Schroeter R., Scoffone F.,
Scrickin A., Tacconi E., Takagi T., Tarkahashi H., Takemaru K.,
RA Sato T., Scanlan E., Schleich S., Schroeter R., Vassarotti A.,
RA Vastida K., Wambutt R., Wedler R., Weitzenegger T.,
RA Voshida K., Voshikawa H.F., Zumstein E., Yoshikawa H., Danchin A.,
Phill Complete genome sequence of the Gram-positive bacterium Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR; S65982; S65982.
Subtliist; BG10016; yybo.
InterPro; PR007114; MFS.
InterPro; IPR007114; MFS.
InterPro; IPR008288; Sub_transporter.
Pfam; PF00083; sugar_tr; 1.
Hypothetical protein; Transmembrane; Transport; Complete proteome.
                                                                                                                                                                                                                                                                        MEDLINE=96051385, PubMed=7584024; Qasanwara N., Makai S., Yoshikawa H.; Makai S., Yoshikawa H.; Makai S., Yoshikawa H.; S., Yoshikawa H.; Makai S., Yoshikawa H.; Saquencing of the 180 kilobase region of the Bacillus subtilis chromosome containing the replication origin.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nature 390:249-256(1997).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Probable).
-!- SIMILARITY: BELONGS TO THE PHTHALATE PERMEASE FAMILY.
                                                                                                                                                                  Firmicutes; Bacillales; Bacillaceae; Bacillus.
                                                         01-OCT-1994 (Rel. 30, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Hypothetical transport protein yybo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=98044033; PubMed=9384377;
                                        01-OCT-1994 (Rel. 30, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; D26185; BAA05188.1; -. EMBL; Z99124; CAB16094.1; -.
                                                                                                                                                                                                                                                                                                                                                                 DNA Res. 1:1-14(1994).
                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                Bacillus subtilis.
                                                                                                                                                                                    NCBI_TaxID=1423;
```

-

```
Submitted (JUN-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                 subtilis
  20;
                                                                                                                                                                                                   77 AIIGDWYDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHBLLTMYHGWVLTSCYILI 136
                                                                                                                                                                                                                      75 LPVGSLLDRFGVAWVTRVGMTIWSFLTIL-----LAFLQGKLLLYLFR-----FLIG 121
                                                                                                                                                                                                                                         137 ITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNIL-APMAVGQI 195
                                                                                                                                                                                                                                                      TTF------DWRVAFLTIGCINVLFTIFFWQYYEQP-----ERHKRISKSELNYI 214
                                                                                                                                                                                                                                                                                                                      250 NLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 309
                                                                                                                                                                                                                                                                                                                                                           310 AGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFT---WLRRK 366
                                                                                                                                                                                                                                                                                                                                                                                                              288 ----ISTISGIAVGWLVDYFIKKGYPNTKVYRTVIIVGMSFGFFFLGSILTNNITVAI 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                          402
                                                                                                                                                                 16
                                                                                                                                                                                22 YISS----LLSGIIILNYFDRV---AISVAAPAIQDSFHLTATELGIVFSIYTYSYTLMQ 74
                                                                                                                                                                                                                                                                               MIFGSPVIGCGFISGWNLVSM---CVEY---VLLWKVYQKTPALAVKAGLKEETTELKQL
                                                                                                                                                                                                                                                                                                                                                                              ---GL-----MIGF----TGYGYTFNLLLTWLPTFFKHTYGMDLMSSGLFTAVPWL---
                                                                                                                                                                                                                                                                                                                                                                                                367 CGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPT-KIPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                  20 YLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVA---GSVLVLG
                                                                                                                                                                                                                                                                                                                                         QKH------NAITTEOIPYKTGPLLKKLFINRKW-----
                                                                                                                                                                                                                                                                                                                                                                                                                                     426 ITTEIYMSNGSNSANIVPETSPESVPIISVSL------LFAGVIAARIGLWSFDLT
                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [1]
SEQUENCE FROM N.A.
STRAIN=168 / BGSC1A1;
MEDLINE=96093926; PubMed=7584049;
Woshida K.-I., Seki S., Fujimura M., Miwa Y., Fujita Y.;
Yoshida and sequencing of a 36-kb region of the Bacillus subtilis
"Cloning and sequencing of a 16-kb region of the Bacillus subtilis
                                                                                                                                             Indels 123;
                                                                                                                           DB 1; Length 435;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŘEVISIONS.
Fujita Y., Shibayama T., Ishio I., Aoyama D., Yoshida K.-I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus Furmicutes; Bacillales; Bacillaceae; Bacillus. NCBI_TaxID=1423;
                                                                                                        9630914D9B606208 CRC64;
                                                                                                                                            74; Mismatches 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CSBC_BACSU STANDARD; PRT; 461 AA. 194633, 032289; Created) 15-UNOV-1995 (Rel. 32, Created) 15-UL-1999 (Rel. 38, Last sequence update) 28-FBB-2003 (Rel. 41, Last annotation update) CSBC OR SS92BR.
                                                                                                                          3.8%; Score 112.5; Di
20.2%; Pred. No. 0.87;
          POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                     POTENTIAL
POTENTIAL
                                                                                               POTENTIAL
                                                                                                       48248 MW;
                                                                                                                       Query Match
Best Local Similarity 20.2%
Matches 97; Conservative
                                                                 345
                                                                                     405
                                                                                   385
407
435 AA;
                                                                                                                                                                                                                                                                               196
          TRANSMEM
                                              TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                  171
                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                       SEQUENCE
                                                                 TRANSMEM
                                                                                    TRANSMEM
                            TRANSMEM
                                      TRANSMEM
                                                                            TRANSMEM
                                                                                             TRANSMEM
TRANSMEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CSBC_BACSU
ò
                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
RA Kunst F., Ogasawara N., Moszar I., Albertini A.M., Alloni G.,
RA Azevedo V., Bertero M.G., Bessieres P., Bolotin A., Borchert S.,
RA Borrise R., Boursher L., Brans A., Braun M., Brignell S.C., Bron S.,
RA Brouillet S., Bruschi C.V., Caldwell B., Capuano V., Carter N.M.,
RA Choi S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A.,
RA Choi S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A.,
RA Choi S.K., Codani J.J., Fabret C., Ferrari E., Foulger D.,
RA Entian K.D. Errington J., Fabret C., Ferrari E., Foulger D.,
RA Ghiseppi G., Guy B.J., Hager C., Ferrari E., Foulger D.,
RA Guiseppi G., Guy B.J., Hager K., Halech J., Harwood C.R., Henaut A.,
RA Hilbert H., Holsappel S., Hosono S., Hullo M.F., Itaya M., Jones L.,
A Joris B., Karamata D., Kasahara Y., Klaerr-Blanchard M., Klein C.,
RA Kobayashi Y., Koetter P., Koningstein G., Krogh S., Kumen M.,
Robayashi Y., Koetter P., Mizuno M., Meest I.D., Nakai S., Noback M.,
Robayashi Y., Mellado R.P., Mizuno M., Moest I.D., Nakai S., Noback M.,
RA Medina N., Mellado R.P., Mizuno M., Moest I.D., Nakai S., Noback M.,
RA Parro V., Pohl T.M., Portetelle D., Porwollik S., Prescott A.M.,
RA Parro V., Pohl T.M., Portetelle D., Porwollik S., Prescott A.M.,
RA Sato T., Scanlan E., Schole B., Rose M., Sadaie Y.,
Sakiguchi J., Sekowska A., Serox S.J., Serror P., Shin B.S., Soldo B.,
Sorokin A., Tacconi E., Takagi T., Takahashi H., Takemaru K.,
RA Takeuchi M., Tamakoshi A., Tanakoshi A., Tarkani E., Waibat A., Yamamoto H., Vannane K., Vasumoto K., Yata K.,
Yoshida K., Yoshikawa H.F., Zumstein E., Yoshikawa H., Danchin A.,
The complete genome sequence of the Gram-positive bacterium Bacillus
F. The Complete genome sequence of the Gram-positive bacterium Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDILINE=9930315; PubMed=10376822;
Akbar S., Lee S.Y., Boylan S.A., Price C.W.;
"Two genes from Bacillus subtilis under the sole control of the general stress transcription factor sigmaB.";
Microbiology 145:1069-1078(1999).
-! FUNCTION: COULD SERVE BITHER A NUTRITIONAL OR AN OSMOTIC PROTECTION FUNCTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: Integral membrane protein (Probable). SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00216; SUGAR TRANSPORT 1; 2.
PROSITE; PS00217; SUGAR TRANSPORT 2; 1.
Transport; Transmembrane; Complete proteome.
DOMAIN 14 CYTOPLASMIC (PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR007114; MFS.
InterPro; IPR005828; Sub_transporter.
InterPro; IPR005829; Sug_transporter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nterPro, IPR003663; Sugar_transpt.
MEDLINE=98044033; PubMed=9384377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AB005554; BAA21604.1; -. EMBL; Z99124; CAB16017.1; -. PIR; D70073; D70073; CAB16017.1; -. Subritist; BG11360; csbC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR00171; SUGRTRNSPORT.
TIGREAMS; TIGR00879; SP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 390:249-256(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00083; sugar_tr;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35
38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15
```

```
STRAIN=ATCC 33913 / NCPPB 528;
MEDLINE=22022145; PubMed=12024217;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA BIND
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82 WV-----DKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILI 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62 ALSGTCSDRWGRRKVVFVLSIIFIIGALACA------FSQTIGMLIASRVILG 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137 ITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIM 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQ-KTPALAVKAGLKEEETELKQLNLHKDT 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLA 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FLYMTVLGFDCITTGYAYT-----QGLSGS-----ILSILMGASAI----TG--- 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25 KFLLYLGHSLSTWGDRMWHF---AVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xanthomonas campestris (pv. campestris).
Bacteria; Proteobacteria; Gammaproteobacteria; Xanthomonadales;
Xanthomonadaceae; Xanthomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        93;
                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1; Length 461;
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 3.7%; Score 109.5; DB 1; Length 4 Best Local Similarity 22.8%; Pred. No. 1.5; Matches 92; Conservative 74; Mismatches 144; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --IMGTVAFTW-LRRKCGLVRT-GLISGLAQLSCLILCVISVF 392
                                 3 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
4 (POTENTIAL).
                                                                                                                                                                    EXTRACELLULAR (POTENTIAL) 8 (POTENTIAL)
                                                                                                   5 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
6 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC (POTENTIAL).

RP -> SA (IN REF. 3).

B6587B5DC7272EFI CRC64;
                                                                                                                                                                                                                                             9 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                     EXTRACELLULAR (POTENTIAL)
               (POTENTIAL)
                                                                                                                                                    CYTOPLASMIC (POTENTIAL).
7 (POTENTIAL).
                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                       10 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                  CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1995 (Rel. 32, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Probable RNA polymerase sigma factor rfaY.
RFAY OR XCC1143.
                                                                                                                                                                                                                                                                                                       (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                         50235 MW;
                                                                                                                                                                                                                                                                      362
339
3399
402
461
461
                                                                                                                                                                                                                                                                                                                                                    424
400
461 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=340;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XANCP
TRANSMEM
DOMAIN
                                                                                                                     DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  354
                                 FRANSMEM
                                                                  FRANSMEM
                                                                                                     'RANSMEM
                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                       PRANSMEM
                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                          IRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P46358;
                                                                                   DOMAIN
                                                                                                                                                      NIAMOC
                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                        DOMAIN
   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HE WAS COC OS BUT THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION OF THE BEAUTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
Adaggio R.B., Monteiro-Vitorello C.B., Van Sluys M.A., Almeida N.F.,
Auaggio R.B., Monteiro-Vitorello C.B., Van Sluys M.A., Almeida N.F.,
Alves L.M.C., do Amaral A.M., Bertolini M.C., Camargo L.B.A.,
Alves L.M.C., do Amaral A.M., Bertolini M.C., Camargo L.B.A.,
Camarotte G., Cannavan F., Cardozo J., Chambergo F., Ciapina L.P.,
A cicarelli R.M.B., Coutinho L.L., Cursino-Santos J.R., El-Dorry H.,
Faria J.B., Ferreira A.J.S., Ferreira R.C.C., Ferro M.I.T.,
Ratins E.C., Machado M.A., Madeira A.M.B.N., Martinez-Rossi N.M.,
Mortins E.C., Maddanis J., Menck C.F.M., Miyaki C.Y., Monon D.H.,
Moreira L.M., Rossi A., Sena J.A.D., Silva C., de Souza R.F.,
Spinola L.A.F., Takita M.A., Tamura R.E., Teixeira B.C., Tezza R.I.D.,
Trindade dos Santos M., Truffi D., Tsai S.M., White F.F.,
Comparison of the genomes of two Xanthomonas pathogens with differing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dow J.M., Osbourn A.E., Wilson T.J., Daniels M.J.;

Dow J.M., Osbourn A.E., Wilson T.J., Daniels M.J.;

"A locus determining pathogenicity of Xanthomonas campestris is
involved in lippoplyaeaccharide biosynthesis.";

"Involved interact. 8:768-777(1995).

-!- FUNCTION: THE SIGMA FACTOR IS AN INITIATION FACTOR THAT PROMOTES
ATTACHMENT OF THE RNA POLYMERASE TO SPECIFIC INITIATION SITES AND
THEN IS RELEASED. THIS SIGMA FACTOR IS INVOLVED IN
LIPPOPOLYSACCHARIDE BIOSYNTHESIS AND PATHOGENICITY.

-!- SIMILARITY: BELONGS TO THE SIGMA-70 FACTOR FAMILY. ECF SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115 LHKHEL-----LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL, U19896; AAA92044.1; -.
InterPro; IPR000818; Sigma70 ECF.
PFfan; PF04542; Sigma70 ECF; 1-
PROSITE; PS01063; SIGMA70.ECF; 1.
Transcription regulation; Sigma factor; DNA-directed RNA polymerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLYMERASE CORE BINDING (POTENTIAL).
H-T-H MOTIF (BY SIMILARITY).
MHADTL -> MLVPGHGFRRCTPTPW (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1; Length 400;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4C19FFE15CE91FAE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.7%; Score 108.5; DB 1;
21.4%; Pred. No. 1.5;
ive 52; Mismatches 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A -> V (IN REF. 2).
A -> P (IN REF. 2).
A -> P (IN REF. 2).
H -> Y (IN REF. 2).
O -> E (IN REF. 2).
O -> E (IN REF. 2).
A -> P (IN REF. 2).
A -> G (IN REF. 2).
A -> V (IN REF. 2).
A -> V (IN REF. 2).
A -> V (IN REF. 2).
A -> V (IN REF. 2).
A -> V (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ٨
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ^
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=7579621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AE012213; AAM40442.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42322 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       host specificities.";
Nature 417:459-463(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200
200
200
200
200
200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Transcription regulati
DNA-binding; Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 77; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     400 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-207
MEDLINE=96025094;
```

σ

```
YD19 METJA
Q587<u>1</u>5;
                           DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                  DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                           DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 489
                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
      TRANSMEM
                                                                                         TRANSMEM
                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                           PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                      MOD_RES
                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YD19 METJA
ID YD19 ME
AC QS8715;
DT 01-NOV-
DT 15-SEP-
DE HYPOCHE
GN MJ1319.
      ST FELL SELL STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                    357
  ---IDQLTNILA-----PMAVGQIMTFGSPVIGCG 206
                                                                                                                                                                                                                                                                                                                                                      LILCVISVEM 393
                                                                                                                                                                                                                                                                                                                                                                                    TYMSGAYLLRFATTAREAAAIRGFTRLSTLTAALTCGAPLLLRAFGAPKWLALCVLAVGM
                                                                                                                      216 TASAAIALGGIGSLGGVGKLGASGLSGSALTSGSAAGALSVLLGMPMAIALLAITGVTLT
                               207 FISGWNLVSMC-----VEYVLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKP
                                                                                                                                                                           LEGIHLMGVKDSNIHELEHEQEPTCASQMAEPFRIFRDG-----WVSYYNQPVFLAGMG
                                                                                                                                                                                                                    156 QOVASLIGLSDAAVRKRISRARATVRNELLQRFDTPARGSAPGVAFATTVTAATMLAAPG
                                                                                                                                                                                                                                                               LAFLYMTVLGFDCI-----AITGYAYTQGLSGSILSILMGAS----AITGIMGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Sodium/iodide corransporter (Na(+)/I(-) cotransporter) (Sodium-iodide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ITE 3/9:45B-46DITES DOLIDE UPTAKE IN THE THYROID GLAND.
FUNCTION: MEDIATES IODIDE UPTAKE IN THE THYROID GLAND.
SUBCELLULAR LOCATION: Integral membrane protein.
SIMILARITY: BELONGS TO THE SODIUM:SOLUTE SYMPORTER FAMILY (SSF).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dai G., Levy O., Carrasco N.; "Cloning and characterization of the thyroid iodide transporter."; Nature 379:458-460(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIGREAMS; TIGROB13, sss; 1.
TIGREAMS; TIGROB13, sss; 1.
PROSITE: PSO0456; NA SOLUT SYMP 1; 1.
PROSITE: PSO0457; NA SOLUT SYMP 3; 1.
PROSITE: PSS0283; NA SOLUT SYMP 3; 1.
Transmembrane; Sodium transport; Symport; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                      -----VAFTWLRRKCGLVR--TGLISGLAQLSC-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL) POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               618 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR; S68513; S68513.
InterPro; IPR001734; Na/solut_symport.
Pfam; PF00474; SSF; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE=Thyroid;
MEDLINE=96158880; PubMed=8559252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             symporter) (Na+/I-symporter)
SLC5A5 OR NIS.
Rattus norvegicus (Rat),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U60282; AAB03338.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16
37
53
74
74
109
109
1157
1163
KLANMNATIRR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Phosphorylation.
                                                                                                                               107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                  276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SL55 RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  063008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SLSS_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                      ò
                                                                                                                         d
                                                                                                                                                                         ð
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                               셤
```

```
164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74 VLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLTMYHGWV-LTSC 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170 STGIICTLYTTVGGMKAVVWTD--VFQVVVMLVGF----------WVILARG 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | | : | | : | | 210 VILLGGPRNVLSLAQNHSRINLMDFDPDFRSRYTFWTFIVGGTLVWLSMYGVNQAQVQRY 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270 VACHTEGKAKLALL-----VNQL------GLFLIVASAAC-CG------- 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 --IVMFVYYKDCDPLLTGRISAPDOYMPLLVLDIFEDLPGVPGLFLACAYSGTLSTASTS 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         359 INAMAAVTVEDLIKPRMPGLAPR-----GS 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          325 DCITTGYAYTQGLSGSILSILMGASAITG---IMGTV-----AFT--WLRRKCGL--VR 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      397 ACLTV------AALSSLIGGGVLQGSFTVMGVISGPLLGAFTLGMLLPACNTPGVL 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | : | | : | | : | | : : : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | | : | : | | : | : | | : | : | | : | : | | : | : | | : | : | | : | : | | : | : | | : | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        372 TGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIY 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          M---SNGSNSANIVPETSPE----SVPIISVSLLFAGVIAARIGLWSFDLTVTQLL 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14 CGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133 YILIITIANIANLASTATAITIQ------RDWIVVVAG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----EDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     220 YVLLWKVYQK--TPALAVKAGLKEEFTELKQLNLHKDTEPKP-------LEGTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVLGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC (POTENTIAL).
PHOSPHORYLATION (BY PKA) (POTENTIAL)
N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          160; Indels 204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.7%; Score 108; DB 1; Length 618;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
EXTRACELLULAR (POTENTIAL)
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED (GLCNAC. . .) (PO 91EFAA6752B4F4B2 CRC64;
                                                                                 EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                    EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR (POTENTIAL)
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                          CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Hypothetical sodium-dependent transporter MJ1319.
MJ1319.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 2.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            492
                                                                                                                                                                                                                                                                                                                                            POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            65196 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      485
497
618 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
nes 103; Conserv
                                                                                                                                                                                   263
287
308
327
                                                                                                                                                                                                                                                                                                                                                                                     348
392
413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4438
445
466
521
```

```
184 TNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK--- 240
                                                                                                                                                                                                                                                                                                          328 ---TIGY-AYTOGLS------GSILSILMGASAITGIMGTVAFTWLRRKC 367
                                                                                                                                                                                                                                                                                                                                                                                                           368 GLVRIGLISGL----AQLSCLI-----LCVISVFMPGSPLDLSVSP--FEDIRS 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          387 HFASGYLLPIAAILEIIIAIWLFGGDKLREHVNKLSEIKLGVWWKYL--AGVVSPII---
                                                                                                     OLNIHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEP
                                                                                                                                                      175 EKANKIMIPFLLFLIILLVLNALTLPGALTG------IEWYLTPDFSALFN--
                                                                                                                                                                                                        292 FRIFRDGWVSYYNQPVF--LAGMGLAFLYMTVL-------GFDCI---
                                                                                                                                                                                                                                                         220 ----YNVWLSAFSQIFFSLSLGFGILIAYASYLPKKSDLTINAVTVSLLNCGFSFLAGFA
                                                                                                                                                                                                                                                                                                                                       411 RFIQGESITPTKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAINS-KIZ / MG3652,
STRAINS-KIZ / MG3652,
STRAINS-19426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA Res. 3:379-392(1996).
-!- SUBCELLULAR LOCATION: Integral membrane protein. Inner membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=K12 / BHB2600;
Richterich P., Lakey N., Gryan G., Jaehn L., Mintz L., Robison K.,
Church G.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria, Proteobacteria, Gammaproteobacteria, Enterobacteriales,
Enterobacteriaceae, Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Itoh T., Aiba H., Baba T., Fujita K., Hayashi K., Inada T., Isono K., Kasai H., Kimura S., Kitakawa M., Kitagawa M., Makino K., Miki T., Mizobuchi K., Mori H., Mori T., Motomura K., Nakade S., Nakamura Y., Nashimoto H., Nishio Y., Oshima T., Saito N., Sampel G., Seki Y., Sivasundaram S., Tagami H., Takeda J., Takedo J., Takemoto K., Wada C., Yamamoto Y., Horiuchi T., Takedo J., Tagami H., Sivasundaram S., Tagami H., Dakesponding to the 40.1-50.0 min region on the linkage map.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---LTAVVFLDASNVLTSGYGGYKTTYVIFGA----LIIPLAFVVSVIL 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              471 SFDLTVTQLLQ-ENVIESERG-----IINGVQNSMNYLLDLLHFIMVIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (OCT-1993) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -7001_ECOLI STANDARD; PRT; 547 AA.
P313941; P313942;
01-FEB-1994 (Rel. 28, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Hypothetical ABC transporter ATP-binding protein yojl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=97251358; PubMed=9097040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escherichia coli.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
                                                                                                                                                      d
                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74 VLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHELLT----MYHGWVL 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TSCYILITITANIANLASTATAITIQRDW-----IVVVAGEDRSKLANMNATIRRIDQL 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----WCLYYLIILVIYGYP----SDPNAYF---- 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20 YLTSAKFLLYLGHSLSTWGD----RMWHFAVSVFLVELYGNSLLLTAVYGLVVAG-SVL 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 YMERESWSSNLGFILASVGSAIGLGNIWRFGYMVYTNG--GGAFLIPYIVALLCVGIPLM 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: PUTATIVE SODIUM-DEPENDENT TRANSPORTER.
SUBCELLULAR LOCATION: Integral membrane protein.
SIMILARITY: Belongs to the sodium:neurotransmitter symporter (SNF)
                                                                                                                            STRAIN-JAL-1 / DSM 2661 / ATCC 43067;

MEDLINE=9637999; PubMed=8680807;

Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D.,

Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,

Kerlavage A.R., Dougherty B.A., Tomb J.-F., Adams M.D., Reich C.I.,

Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A.,

Scott J.L., Geoghagen N.S.M., Weidman J.F., Puhrmann J.L., Nguyen D.

Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C.,

Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M.,

Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.;

"Complete genome sequence of the methanogenic archaeon, Methanococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ILEFAIGHYTKKSAPLALEK-------LHKGSEWTGWFAVISGFII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.6%; Score 106.5; DB 1; Length 492; 0.7%; Pred. No. 2.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79; Mismatches 184; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Probon; PD000446; Na7ntran symport; 1.
PROSITE; PS00610; NA NEUROTRAN SYMP 1; 1.
PROSITE; PS00754; NA NEUROTRAN SYMP 2; FALSE_NEG.
PROSITE; PS50267; NA NEUROTRAN SYMP 3; 1.
Hypothetical protein; Transport; Transmembrane; Symport;
Archaea; Euryarchaeota; Methanococci; Methanococales;
Methanocaldococcaceae; Methanocaldococcus.
NCBI_TaxID=2190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A4CEF33AC40D4DB9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000175; Na/ntran_symport.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL
                                                                                                             FROM N.A.
AL-1 / DSM 2661 / ATCC 43067;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53467 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00209; SNF; 1.
PRINTS; PR00176; NANEUSMPORT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; U67572; AAB99329.1; -. PIR; F64464; F64464.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Science 273:1058-1073(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 122; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100 TSYYVVIIA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   463
492 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FIGR; MJ1319; -
                                                                                                                                                                                                                                                                                                                                                                                                                jannaschii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
```

g

9

ð

```
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LVV--QNVSVILCGIILMMVFLHKH-ELLTMYHGWV--LTSCYILIITIANIANLASTAT 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          151 AITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A-----SLLAGLTSDVRNITIAFVRLPELVQGIILTIGSAAY-LMMLSG 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             148 KMLLVTAIMWAITIWGGFVLVARVYKH-----MATLRETEDKLYTDFQTVLEGRKELTL 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAG 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     202 NRERAEYVFNNLYIPDAQEYRHHIIR------ADTFHLSAVNW----SNIMMLGA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----ADTNVAATYSLTLL----FLR 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           211 ------WNLVSMCVEYVLLWKVYQKTPALAVKAGLKEBETEL-------KQLNL 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVR 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48 LIVLPEFLGLLL---LLMAVTLGSQLALTTLGHHFVYRLRSEFIKRILDTHVERIEQLGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNARL-KVAQTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
        : BELONGS TO THE ABC TRANSPORTER FAMILY. SIMILAR TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 3.3;
55; Mismatches 130; Indels 116;
                                                                                                                                                                                                                                                                                                                                                                                         TIGREAMS; TIGRO1194; cyc pep trnsptr; 1.
PROSITE; PS00211; ABC TRANSPÖRTER 1; 1.
PROSITE; PS50893; ABC_TRANSPORTER 2; 1.
Hypothetical protein; ATP-binding; Transport; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.6%; Score 106; DB 1; Length 547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11523935EDFD9EAB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                InterPro; IPR003593; AAA ATPBASE.
InterPro; IPR00140; ABC TM transpt.
InterPro; IPR003439; ABC_transporter.
InterPro; IPR005898; Cyc_pop, transpt.
Pfam; PF000064; ABC_membrane; 1.
ProDom; PD000006; ABC_tran; 1.
ProDom; PD000006; ABC_tran; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Inner membrane; Complete proteome
TRANSMEM 16 36 DOTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGLISGLAQLSCLILCVIS 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | |:| : | |: TPLLSAVGALPTLLTAQVA 295
                                                                                                                                                                                                    EMBL; AE000310; AAC75271.1; -.
EMBL; D90850; BAA15994.1; -.
PIR; A64991; A64991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247 IGLVFWMANSLGW-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61552 MW;
                                                                                                                                                                                       EMBL; U00008; AAA16403.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 20.6
Matches 78; Conservative
                                                                                                                                                                                                                                                  EcoGene, EG12070, yojI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169
260
290
363
                SIMILARITY: BELOI
P.SYRINGAE SYRD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
270
356
347 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the Buropean Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                          STRAIN=Sprague-Dawley, TISSUE-Jejunum, MEDLINE=94008761; PubMed=8404647; MEDLINE=94008761; PubMed=8404647; Inukai K., Asano T., Katagiri H., Ishihara H., Anai M., Fukushima Y., Tsukuda K., Kikuchi M., Yazaki Y., Oka Y.; "Cloning and increased expression with fructose feeding of rat jejunal
                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus
                     01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Solute carrier family 2, facilitated glucose transporter, member 5
Glucose transporter type 5, small intestine) (Fructose transporter)
SLC2A5 OR GLUTS.
Rattus norvegicus (Rat).
                                                                                                                                                                                                     STRAIN=Sprague-Dawley, TISSUE-Jejunum,
MEDLINE-93325725; PubMed-8333543;
Rand E.B., Depaoli A.M., Davidson N.O., Bell G.I., Burant C.F.;
"Sequence, tissue distribution, and functional characterization of
the rat fructose transporter GLUTS,",
Am. J. Physiol. 264:G1169-G1176(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00216; SUGAR_TRANSPORT_1; 1.
PROSITE; PS00217; SUGAR_TRANSPORT_2; 1.
Transmembrane; Sugar transport; Transport; Glycoprotein; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
3 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC (POTENTIAL).
502 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-Sprague-Dawley, TISSUE-Intestine,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR005828; Sub_transporter.
InterPro; IPR005829; Sug_transporter.
InterPro; IPR003663; Sugar_transpt.
                                                                                                                                                                                                                                                                                                                                                                                                                    Endocrinology 133:2009-2014(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00083; sugar tr; 1.
PRINTS; PR00171; SUGRTRNSPORT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; L05195; AAA02627.1; -.. EMBL; D13871; BAA02893.1; -.. EMBL; D28562; BAA05912.1; -.. PIR; I53268; I53268. InterPro; IPR007114; MFS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSPORTER SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IIGRFAMS; TIGR00879; SP;
STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11
32
71
92
99
120
                                                                                                                                                                                                                                                                                 Am. J. Physiol. 26.
[2]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                         SEQUENCE FROM N.A
                                                                                                                                                           NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
33
72
72
93
100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
TRANSMEM
DOMAIN
```

```
PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54;
                      CAVPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                      A2AC CAV
Q60476;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
RESULT 13
A2AC_CAVPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98 VQNVSVILC-GIILMMVFLHKHELLTMYHGWVLTSCYILIITIA-NIANLASTATAITIQ 155
                                                                                                                                                                                                                                                                                                                                                                                                                                  129 ASRLLVGICAGISSNVVPMYLGËLAPKNLRGALGVVPQLFITVGILVAQLFGLRSVLASE 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 275 ELEHEQEPTCASQMAEPFRTFRD---GWVSYYNQPVFLAGMGLAFLYMTVLGFDCITTGY 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             332 AYTQGL-----SGSILSILMGASAITGIMGTVAF----TWLRRKCGLVRTGLISGLAQ 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LSCLILCVISVFMPGSPLDLSVSPFEDIRS--RFIQGESITPTKIPEI-TTEIYMSNGSN 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     215 SMCVEYVLLWKVYQKTPALAVKAGLKEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIH 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SANIVPETSPESVPIIS---VSLLFAGVIAARIGLWSFDLTVTQLLQENVIESERGIING 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGN------SLLLTAV
                                                                                                                                                                                                                                                                                                                                         10 GKLTLVLALATFLAAFGSSFQYGYNVAAVNSPSEFMQQFYNDTYYDRNKENIESFTLTLL
                                                                                                                                                                                                                                                                                                                                                                 64 YGLVVA-----KVAQT--SLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                       RDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTF-GSPVIGCGFISGWNLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----RYLLIQK---KNESAAEKA-----LQTLRGWKDV------DMEME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 297 YYADQIYLSAGVKSNDVQYVTAGTGAVNVFMTMYTVFVVELWGRRNL-----LLIGFS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNKLFACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               189 EGWPILLG--------LTGVPAGLQLLLLPFFPESP------
                                                                                                                                                                                                                                                                         DB 1; Length 502;
                                                                                                                                                              11 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
12 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
V -> A (IN REF. 1).
T -> S (IN REF. 2).
T -> S (IN REF. 2).
K -> N (IN REF. 2).
                         EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                   871FEDEFA1E7884D CRC64;
                                                                      (FOIENITAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                        EXTRACELLULAR (POTENTIAL)
                                                                                            8 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                          6 (POTENTIAL).
CYTOPLASMIC (POTENTIAL)
       (POTENTIAL)
                                                                                                                                              CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                       3.6%; Score 104.5; DB 1;
20.0%; Pred. No. 3.8;
cive 88; Mismatches 211;
                                                                                                                                   (POTENTIAL)
                                                                                                                                                           (POTENTIAL)
                                                                                        (POTENTIAL)
                                                                                                               9 (POTENTIAL)
                                                                                                                                                                                                                                                 55543 MW;
                                                                                                                                                                                                                                                                                   Local Similarity ....
                                                                                        335
342
363
367
411
                                                                                                                                                                                                                                                  502 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PDAKE 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEKEE 489
                     TRANSMEM
DOMAIN
TRANSMEM
                                                     DOMAIN
TRANSMEM
DOMAIN
                                                                                                  DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                              DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                              TRANSMEM
DOMAIN
CONFLICT
                                                                                                                                                                                                              CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                     15
                                                                                                                                                                                                                                                                                                                                                                                                                                                        156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              555
                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   485
                                                                                                                                    TRANSMEM
                                                                                      TRANSMEM
셤
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 LTAVYGLV----VAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFL 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50 LAAVVGFLIVFTVVGNVLVVIAVL----TSRALRAPQNLFLVSLASADILVATLVMPFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Svensson S.P., Bailey T.J., Porter A.C., Richman J.G., Regan J.W.;
"Heterologous expression of the cloned guinea pig alpha 2A, alpha 2B,
and alpha 2C adrenoceptor subtypes. Radioligand binding and
functional coupling to a CAMP-responsive reporter gene.";
Bloodhem. Pharmacol. 51:291-300(1996).
-!- FUNCTION: ALPHA-2 ADRENBENCE RECEPTORS MEDIATE THE CATECHOLAMINE-
INDUCED INHIBITION OF ADENYLATE CYCLASE THROUGH THE ACTION OF G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: Integral membrane protein. SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.
                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLENTED.
N-LINKED (GLCNAC. . ) (POTENTIAL)
N-LINKED (GLCNAC. . ) (POTENTIAL)
                                                                                                                                                                                                     Cavia porcellus (Guinea pig).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleosto
Mammalia, Eutheria, Rodentia, Hystricognathi, Caviidae, Cavia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.5%; Score 103.5; DB 1; Length 455; 24.7%; Pred. No. 4; ive 36; Mismatches 80; Indels 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000276; GPCR_Rhodpsn.
PERM: PR00021; Tun_1; 1.
PRINTS; PR00021; GFCRRHODOPSN.
PROSITE; PS00237; G_PROTEIN_RECEP_F1_1; 1.
PROSITE; PS50262; G_PROTEIN_RECEP_F1_2; 1.
G_protein coupled receptor; Transmembrane; Glycoprotein; Multigene family; Phosphorylation.
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC (POTENTIAL).
4 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6B657D247FF8A3F4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                      01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
28-FEB-203 (Rel. 41, Last annotation update)
Alpha-2C adrenergic receptor (Alpha-2C adrenoceptor)
   455 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=96152573; PubMed=8573196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49351 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U25724; AAA67076.1;
HSSP; P29274; IMMH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4413
455
177
178
179
179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
455 AA;
                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
```

```
CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                          DOMAIN
TRANSMEM
                                                                                         DOMAIN
TRANSMEM
                                                                                                                                   TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          443
                                                                           TRANSMEM
                                                                                                                                                                  FRANSMEM
                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HH2R RAT
                                              TRANSMEM
                                                                                                                                                                                                                            TRANSMEM
                                                                                                                      DOMAIN
                                                                                                                                                                                 DOMAIN
                                                            DOMAIN
                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HH2R RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                           116 HKHELLT-MYHGWVLTSCYI---LIITIANIANLASTATAITIORDWIVVVAGEDRSKLA 171
                                                       NMNATIRRIDQLTNILAPMAVGQIMTF------GSPVIGCGF-ISGWNLVSMCV-
                Wang M.Y., Tsai M.Y., Wang C.;
"Identification of chicken liver glucose transporter.";
Arch Biochem Biophys .310.172-179 [1994].

-!- FUNCTION: FACILITATIVE GLUCOSE TRANSPORTER. THIS ISOFORM LIKELY
MEDIATES THE BIDIRECTIONAL TRANSFER OF GLUCOSE ACROSS THE PLASMA
MENBRANE OF HEPATOCYTES AND IS RESPONSIBLE FOR UPTAKE OF GLUCOSE
BY THE BETA CELLS; MAY COMPRISE PART OF THE GLUCOSE-SENSING
MECHANISM OF THE BETA CELL. MAY ALSO PARTICIPATE WITH THE
NA(+)/GLUCOSE COTRANSPORTER IN THE TRANSCELLULAR TRANSPORT OF
GLUCOSE IN THE SMALL INTESTINE AND KIDNEY (BY SIMILARITY).

-!- SUBCELLULAR LOCATION: Integral membrane protein.

-!- SIMILARITY: BELONGS TO THE SUGAR TRANSPORTER FAMILY. GLUCOSE
TRANSPORTER SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                  15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Solute carrier family 2, facilitated glucose transporter, member stransporter type 2, liver).
SLC2A2 OR GLUT2 OR GLUT-2.
Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           transport; Transport; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
2 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
3 (POTENTIAL).
                                                                                                                                   214 SFFAPCLIMGLVYARIYRVAKLRTRTLSEKRGPAGPEGE 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYTOPLASMIC (POTENTIAL)
                                                                                                                   ------EYVLLWKVYQ-KTPALAVKAGLKEETE
                                                                                                                                                                                                                         533 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR; S4320; S43230.
InterPro; IPR007114; MFS.
InterPro; IPR005829; Sub_transporter.
InterPro; IPR005829; Suga_transporter.
InterPro; IPR003663; Sugar_transpt.
Pfam; PF00083; sugar_tr; 1.
PRINTS; PR00171; SUGRITANSPORT_I; IPR081TE; PS00216; SUGAR_TRANSPORT_I; I.
PROSITE; PS00216; SUGAR_TRANSPORT_Z; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=94213485; PubMed=8161202;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; Z22932; CAA80519.1; -. PIR; S43230; S43230.
                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38
38
110
131
136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fransmembrane; Sugar
                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                     Gallus.
NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Multigene family
                                                                                                                                                                                                                        CHICK
                                                         172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                         8
                                                                                 g
                                                                                                                ð
```

```
187 VVSEVSPTALRGALGTLHQLAIVTGILI------SQVLGLDFLLGNDELWPLLLG 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SAVAMT-----VGLV---LLSQFAWMSYVSMVAIFLFVIFFEVGFGFIPWFIVAELFSQG 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DSNIHELEHEQEPTCASQMAEPFRIFRDGWVSYYNQPVFLA------GMGLAFLYM 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --EIAEMEKEKQEAASEKRVSIGQLFSS---SKYRQAVIVALMVQISQQFSGINAIFYYS 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             357 -TVAFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFM-----PG------395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    339 TNIFORAGVGQPVYATIGVGVVNTVF-----TVISVFLVEKAGRRSLFLAGLMGMLI 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42 WHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWV-DKNARLKVAQTSLVVQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WSLSVSMF-----AVGGMVSSFTV-----GWIGDRLGRVK----AMLVVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145 VLSIAGNLLMGLAKMGPSHIL-IIAGRAITGLY------CGLSSGLVP-----M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISG----WNL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---VSMCVEYVLLWKVYQKTPALAVKAG-LKEEETELKQLNLHKDTEPKPLEGTHLMGVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T--------VLGFDCITTGYAYTQGLSGSILSILMGASA-----ITGIMG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                               12 (POTENTIAL).
CYTOPLASNIC (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
', D06284CDC2779A3D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels 153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 533;
                                                        EXTRACELLULAR (POTENTIAL).

EXTRACELLULAR (POTENTIAL).

CYTOPLASMIC (POTENTIAL).

T (POTENTIAL).

EXTRACELLULAR (POTENTIAL).

RYTRACELLULAR (POTENTIAL).

CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                           10 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
11 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
12 (POTENTIAL).
                                                                                                                                                                                                                                   9 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
EXTRACELLULAR (POTENTIAL)
                                    TOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.5%; Score 103.5; DB 1; 20.2%; Pred. No. 4.9; ive 70; Mismatches 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Gastric receptor 1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         358 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -SPLDLSVSPFEDIRSRFIQG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ::|: | :
PRPAAIAVAGFCNWACNFIVG 463
                                                                                                                                                                                                                                                                                           445
466
11
471
E
492
11:
533
CN
69
69
MV:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Histamine H2 receptor (H2R)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 89; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10116
                                                                                                                                             316
337
351
372
380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OCCORDINATION
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the between an another EMBL outstation. The suse by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ITIQRDWIVVV-----AGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSFV 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SLLLTAVYGLVVAGSVLVLGAIIGDWYDKNARLKVAQTSLVVQNVSVILCGIILMMVFLH 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ISLVFIWVISITLSFLSIHLGWNSRNGTRGGNDTFKCKVQVNEVYG--LVDGLVTFYLP- 193.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117 KHEL-LIMYHGWVLTSCYI---LIITIANIANI-----------ASTATA 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  203 IGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEFTELKQLNLHKDTEPKPLEG 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |::|| : ::||:|:| | | | ||:|| SVVLTTLILITIAGNVVVCLA----VSLNRRLRSLTNCFIVSLAATDLILGLLVLPFSA 76
                           MEDLINE-92028890; PubMed=1930188;

Ruat M., Traiffort E., Arrang J.-M., Leurs R., Schwartz J.-C.;

"Cloning and tissue expression of a rat histamine H2-receptor gene.";

Biochem. Biophys. Res. Commun. 179:1470-1478(1991).

-I-FUNCTION: THE H2 SUBCLASS OF HISTAMINE RECEPTORS MEDIATES GASTRIC ACID SECRETION. THE ACTIVITY OF THIS RECEPTOR IS MEDIATED BY G

PROTEINS WHICH ACTIVATE ADENYLYL CYCLASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                      SUBCELLULAR LOCATION: Integral membrane protein. SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
ESSENTIAL FOR HISTAMINE BINDING (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESSENTIAL FOR TIOTIDINE BINDING AND IMPLICATED IN HISTAMINE BINDING (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMPLICATED IN HISTAMINE BINDING (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED (GLCNAC. . .) (POTENTIAL).
BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
3.5%; Score 103; DB 1; Length 358;
Best Local Similarity 19.8%; Pred. No. 3.3;
Matches 66; Conservative 53; Mismatches 112; Indels 102;
                                                                                                                                                                                                                                                                                                                       PIR; JQ1278; JQ1278.

HSSP; P29274; IMMH.
InterPro; IPROGREG Rhodpsn.
Pfam; PF0001; 7tm 1; 1.
PRINTS; PR00237; GPCRRHODOPSN.
PROSITE; PS00237; G_PROTEIN RECEP_F1_2; 1.
G-protein coupled receptor; Transmembrane; Glycoprotein.
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4889F69B7B5D5DDC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         40253 MW;
                                                                                                                                                                                                                                                                                                         EMBL; S57565; AAB19935.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1159
203
233
233
257
256
266
288
288
358
358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       358 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          189
[1]
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     137
                                                                                                                                                                                                                                                                                                                                                                                                                                                               RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SITE
 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
```

194CLIMCVTYYRIFKIAREQAKRIN 216	263 THLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVL 322	217 -HISSWKAATIREHKATVTLAAVMGAFIICWFPYFTAFVYRGLR 259	323 GFDCITTGYAYTQGLSGSILSILMGASAITGIM 355	260 GDDAINEAVEGIVLWLGYANSALNPIL 286
qa	ò	qq	ò	qq

Search completed: November 5, 2003, 18:31:18 Job time : 22 secs Q9bkt8 caenorhabdi

us-09-715-927-6.rspt

Scoring table:

Searched:

Minimum DB Maximum DB

Database

Perfect score:

Run on:

Sequence:

```
01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2000 (TrEMBLrel. 2), Last sequence update)
01-MAR-2003 (TrEMBLrel. 2), Last annotation update)
Iron-regulated transporter IREGI (Ferroportinl) (Hypothetical protein)
(Solute carrier family 11 (Proton-coupled divalent metal ion transporters), member 3).
IREGI OR FPNI OR DKFZP586J0624.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Placenta;
MEDLINE=20155474; PubMed=10693807;
Donovan A., Brownlie A., Zhou Y., Shepard J., Pratt S.J., Moynihan J.
Donovan A., Brownlie A., Zapata A., Law T.C., Brugnara C.,
Baw B.H., Drejer A., Barut B., Zapata A., Law T.C., Brugnara C.,
Lux S.E. IV, Pinkus G.S., Pinkus J.L., Kingsley P.D., Palis J.,
Fleming M.D., Andrews N.C., Zon L.I.;
Pleming M.D., Andrews N.C., Zon L.I.;
Positional Cloning of Zebrafish Ferropoxtin1 Identifies a Conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "A novel duodenal iron-regulated transporter, IREG1, implicated in basolateral transfer of iron to the circulation."; Mol. Cell 5:299-309(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=20337919; PubMed=10882071;
MKKIR A.T., Marciani P., Rolfs A., Brennan K., Wehr K., Barrow D.,
Miret S., Bomford A., Peters T.J., Farzaneh F., Hediger M.A.,
Hentze M.W., Simpson K.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        571 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALIGNMENTS
Q8IA95
Q9BKT8
Q8BUM5
Q8W4E7
                                                                        001891
004629
004629
0983A3
0981P3
0971U6
0971U6
087F15
0864V4
0897F15
0867V3
087F16
087F16
087F16
087F16
087F16
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
087F17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8NU27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9XW19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9KWU2
                                                                                                                                                                                                          409
393
763
421
481
485
949
537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                               783
469
418
491
408
503
387
424
392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                   120
119.5
119.5
117.5
117.5
115.5
115.5
115.5
115.5
115.5
115.5
 498
471.5
371
301
                                                                                                                               157
136.5
135.5
128
123.5
120.5
120.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9NP59
   Q81VD2 homo sapien
Q91x10 homo sapien
Q91x10 homo sapien
Q91xp4 mus musculu
Q923u9 rattus norv
Q81fw0 brachydanio
Q81w23 brachydanio
Q8aw23 brachydanio
Q8aw23 brachydanio
Q821c9 rattus norv
Q921c9 rattus norv
Q82nc9 rattus norv
Q8bme5 mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29np59 homo sapien
                                                                                                                         5, 2003, 18:24:21; Search time 58 Seconds (without alignments) 2540.483 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                    US-09-715-927-6
2929
1 MTRAGDHNRQRGCCGSLADY......ACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                   GenCore version 5.1.6 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                        830525 segs, 258052604 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q81VB2
Q9NRL0
Q9JH19
Q923U9
Q8JFW0
Q819R3
Q8AW23
Q8AW23
Q8AW28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_organelle:*
sp_phage:*
sp_plant:*
sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_wortebrate:*
sp_wortebrate:*
                                                                                                                                                                                                                                                                                                  , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9NP59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_human:*
sp_invertebrate:*
sp_mammal:*
sp_mamnal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_rvirus:*
sp_bacteriap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_archea:*
sp_bacteria:*
sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11333311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPTREMBL
                                                                                                                               November
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9999.2
98899.2
96647.3
9677.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
967.2
```

IISSUE=Uterus; Duesterhoeft A., Lauber J., Mewes H.W., Gassenhuber J., Wiemann S.;

Vertebrate Iron Exporter."; Nature 403:776-781(2000).

SEQUENCE FROM N.A.

Q9nus1 homo sapien O80905 arabidopsis Q91zc8 arabidopsis O44607 caenorhabdi

Q9NUS1 080905 Q9LZC8 044607

10

2929 2921 29929 29921 19925 19975 19

Score

Result

Q8Ytp1 anabaena sp 065383 arabidopsis Q97402 bacillus ha Q97811 drosophila Q97819 clostridium Q97409 caenorhabdi Q980027 corynebacte Q97413 streptococc

ö

9

180

300

360

420

480

```
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SLC11A3 iron transporter.
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                al Similarity 99.8
570; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                   SEQUENCE FROM N.A.
      NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                Best Local
Matches 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O9NRL0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
Q9NRL0
      SOR REPRESENTANT SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR READ SOR 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLMSFDLTVTQLL 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QENVIESERGIINGVQNSMNYLLDILHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MTRAGDHINRORGCCGSLADYLTSAKFLLYLGHSLSTWGDRWWFFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LIMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EEETELKOLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASOMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SYYNOPVFLAGMGLAFLYMTVLGFDCITTGYAYTOGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TKI PEITTEIYMSNGSNSANI VPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Solute carrier family 11 (Proton-coupled divalent metal ion transporters), member 3.
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 2929; DB 4; Length 571; 100.0%; Pred. No. 1.38-216; ive 0; Mismatches 0; Indels 0
                                                                                                                         Strausberg R.;
Strausberg R.;
Submitted (SEP-2002) to the EMBL/GenBank/DDBJ databases.
EMBL, AF231121; AAR44330.1; -..
EMBL, AF226641; AAR36697.1; -..
EMBL; AL13644; CAB66878.1; -..
EMBL; BC037733; AAH37733.1; -..
Genew; HGNC.10909; SLC11A3.
InterPro; IPR001993; Mitoch carrier.
PROSITE: PS00215; MITOCH CARRIER; 1.
      the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            571 AA; 62542 MW; E4D6B5594C904959 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 100.
nes 571; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
      t
C
                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical protein.
(JAN-2000)
                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q8IVB2;
Q8IVB2;
01-MAR-2003 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Simi
Matches 571;
      Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR COSTOR CO
      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
```

```
540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MTRAGDHNRORGCGSLADYLTSAKFLLYLGHSLSTWGDRWWHFAVSVFLVELYGNSLIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 LTWYHGWVLTSCYILITIANIANIASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOLINILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 DOLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 SYYNOPVFLAGMGLAFLYMTVLGSDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161 | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | HILLING | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421 TKIPEITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLMSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481 QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481 QENVIESERGIINGVQNSMYYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SYYNOPVFLAGMGLAFLYMTVLGFDC1TTGYAYTQGLSGS1LS1LMGASA1TGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=20347902; PubMed=10747949; ABDLINE=20347902; PubMed=10747949; AbDoud S., Haile D.J.; "A Novel Mammalian Iron-regulated Protein Involved in Intracellular Iron Metabolism."; Jron Metabolism."; Jron Metabolism."; J. Biol. Chem. 275:19906-19912(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                      Length 571;
TISSUE-Blood;
Strauberg R.;
Submitted (JUL-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; BC035893; AAH35893.1; -
SEQUENCE 571 AA; 62482 MW; 45D6B5503C90495F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-00T-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                               99.7%; Score 2921; DB 4;
99.8%; Pred. No. 5.5e-216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541 FAQNTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      571
```

S

g

QQ

ò

g

ò

g

ò

q 8 g 8 g

ò

셤

8

g

ò

ઠે

```
A Arakawa T., Hara A., Shibata K., Yoshino M., Itoh M., Ishii Y., Arakawa T., Hara A., Shibata K., Yoshino M., Itoh M., Ishii Y., Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S., Arakawa T., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I., Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R., Radota K., Matsuda H., Bono H., Kasukawa T., Saito R., Radota K., Matsuda H., Shoo H., Batalov S., Casavant T., Ruell P., Lewis S., Matsuo Y., Nikaido I., King B., Kochiwa H.; Kuell P., Lewis S., Matsuo Y., Nikaido I., Resola G., Quackenbush J., Askai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G., Black J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F., Bromstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M., Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H., Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P., Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N., Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F., Whyshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                  MEDLINE=20155474; PubMed=10693807;
Donovan A., Brownlie A., Zhou Y., Shepard J., Pratt S.J., Moynihan J., Ponovan A., Brownlie A., Zhou Y., Shepard J., Brugnara C., Lux S.E. IV, Pinkus G.S., Finkus J.L., Kingsley P.D., Palis J., Fleming M.D., Andrews N.C., Zon L.I., Kingsley P.D., Palis J., Fleming M.D., Andrews N.C., Zon L.I., Wingsley P.D., Palis J., Vertebrate Iron Exporter.";
Neostichal Cloning of Zebrafish Ferroportinl Identifies a Conserved Vertebrate Iron Exporter.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                   Abboud S., Haile D.J.;
"A Novel Mammalian Iron-regulated Protein Involved in Intracellular
                                                                                                                                                                                 band 1B and SLC11A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Functional annotation of a full-length mouse cDNA collection."; Nature 409:685-690(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89.4%; Score 2618.5; DB 11; Lengt
90.2%; Pred. No. 9.4e-193;
tive 18; Mismatches 31; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strausberg R.;
Submitted (FBB-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF215637; AAF80987.1; -.
EMBL; AF226613; AAF36696.1; -.
EMBL; AK008700; BAB25840.1; -.
EMBL; BC003438; AAH03438.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGD; MGI:1315204; Slc39al.
InterPro; IPR001993; Mitoch carrier.
PROSITE; PS00215; MITOCH CARRIER; 1.
SEQUENCE 570 AA; 62702 MW; 7125CC6171394A0A CRC64;
                                                                                                                                                           Haile D.J.;

"Assignment of slc11a3 to mouse chromosome 1 band human chromosome 2q32 by in situ hybridization.";
Cytogenet. Cell Genet. 88:328-329(2000).
                                                                            Biol. Chem. 275:19906-19912(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN-CS7BL/6J; TISSUE-Stomach;
MEDLINE-21085660; PubMed=11217851;
MEDLINE=20347902; PubMed=10747949;
                                                                                                                   SEQUENCE FROM N.A.
MEDLINE=20291023; PubMed=10828623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                           Iron Metabolism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hayashizaki Y.;
                                                                                                                                                                                                                                                                                   TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Simeses 518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                       TAVYGLVVAGSVLVLGDIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TKIPBITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLMSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QENVIESERGIINGVQNSMYYLLDLIHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                                                                                                                                      TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOLINILAPMAVGOIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFBDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                                                                                                                                                                                                   Gaps
                                                                            ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Buteleostomi;
Sciurognathi; Muridae; Murinae; Mus.
                                                 Haile D.J.;
"Assignment of slc11a3 to mouse chromosome 1 band 1B and SLC11A3
"human chromosome 2432 by in situ hybridization.";
Cytogenet. Cell Genet. 88:328-329(2000).
EMBL; AF215636; AAF80986.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
SLC11A3 iron transporter (Perroportin1) (Solute carrier family (Iron-regulated transporter), member 1).
                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                          Length 571;
                                                                                                                                                                                                                                      99.2%; Score 2906; DB 4; Length 5 99.5%; Pred. No. 7.8e-215; .ive 0; Mismatches 3; Indels
                                                                                                                                                       InterPro; IPR001993; Mitoch carrier.
PROSITE; PS00215; MITOCH CARRIER; 1.
SEQUENCE 571 AA; 62581 MW; 88707BFFC4A4B921 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FAQNTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      570 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FAQNTLGNKLFACGPDAKEVRKENQANTSVV
          VUENCE FROM N.A.
VLINE=20291023; PubMed=10828623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                    Query Match
Best Local Similarity 99.5<sup>3</sup>
Matches 568; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10090;
              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
```

120

9 9

Gaps

7;

Q9JHI9; 61HL60 RESULT 4 Q9JHI9

```
~
                          180
                                                                         240
                                                                                                                                                                   300
                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QLLQENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIM 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 DQLTINILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
  181 DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYFLLWKVYQKTPALAVKAALK.
                                                                                                                                                                                                                                                                                                                                                                                     421 TIXIPETVFTTEMHMSNMSN----VHEMSTKPIPIVSVSLLFAGVIAARIGLMSFDLTVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            477 QLLQENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 TAVYGLVVAGSVLVLGAIIGDMVDKARAKKVAQTSLVVQNVSVILCGIILMMVFLHKNEL
                                                                         DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVBYVLLWKVYQKTPALAVKAGLK
                                                                                                                                                                   EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                  241 VEESELKOLTSPKDTEPKPLEGTHLMGEKDSNIRELECEQEPTCASQMAEPFRTFRDGWV
                                                                                                                                                                                                                                                                SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                              301 SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                       421 -TKIPE--ITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 LAMYHGWVLTVCYILIITIANIANLASTATAITIQRDWIVVVAGENRSRLADMNATIRRI
                                                                                                                                                                                                                                                                                                                                                          TWLRRKCGLVRTGLISGLAOLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MIKSRDQTHQEGCCGSLANYLTSAKFLLYLGHSLSTWGDRWHFAVSVFLVELYGNGLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattuš norvegicus (Rat).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SECUENCE FROM N.A.
STRAIN=Sprague-Dawley;
STRAIN=Sprague-Dawley;
STRAIN=Sprague-Dawley;
"Iron induces ferroportin 1 (FPT1) clustering and redistribution in rat intestinal epithelial cells.";
Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AF394785; AAK77858.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 11; Length 570;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match

88.8%; Score 2600.5; DB 11; Lengt
Best Local Similarity 89.9%; Pred. No. 2.3e-191;
Matches 514; Conservative 19; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001993; Mitoch carrier.
PROSITE; PS00215; MITOCH CARRIER; 1.
SEQUENCE 570 AA; 62586 MW; 766786F22F054E94 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-DEC-2001 (TrEMBLrel. 19, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         538 YFRFAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ferroportin 1.
                                                                                                                                                                      241
                                                                         181
                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q923U9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
Q923U9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                    ઠે
                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                      300
                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                     537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QLLQENVIESERGIINGVQNSMNYLLDLHFIMVILAPNPEAFGLLVLISVSFVAMGHLM 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMWVFLHKNEL 120
                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                          477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-2037919; PubMed=10882071;
MCKIG A.T., Marciani P., Rolfs A., Brennan K., Wehr K., Barrow D.,
MIREL S., Bomford A., Peters T.J., Farzaneh F., Hediger M.A.,
Hentze M.W., Simpson R.J.;
"A novel duodenal iron-regulated transporter, IREG1, implicated in the
basolateral transfer of iron to the circulation.";
MOJ. Cell 5:299-309(2000).
EMBL; AF231120; AAF44329-1; -.
MOJ. MAG1:1315204; SIG239a1.
InterPro; IPR001993; Mitoch carrier.
PROSITE; PS00215; MITOCH CARRIER; 1.
SEQUENCE 570 AA; 62655 MW; C648A6C61C51EDCD CRC64;
                                                                                                                                                                                                SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGINGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTKI PETVFTTEMHMSNMSN----VHEMSTKPI PI VSVSLLFAGVI AARIGLMSFDLIVT
                                                                         DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK
                                                                                                                  DOLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYFLLWKVYQKTPALAVKAALK
                                                                                                                                                                      EEETELKOLNIHKDIEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRIFRDGWV
                                                                                                                                                                                                                                                                SYXNOPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QLLQENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                          -TKIPE--ITTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 11; Length 570;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89.2%; Score 2612.5; DB 11; Lengt
90.1%; Pred. No. 2.7e-192;
iive 18; Mismatches· 32; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YFRFAQNTLGNKLFACGPDAKEVRKENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YFRFAQKTLGNQIFVCGPDEKEVTDENQPNTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ź
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Iron-regulated transporter IREG1. SLC39A1 OR IREG1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2000 (TrEMBLrel. 15,
01-OCT-2000 (TrEMBLrel. 15,
01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10090
                                                                                                                       181
                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                          121
                                                                         181
                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09JKP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                  셤
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ID DOT DOT DOT SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING SERVING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                      ð
                                                                                                                                                                   8
                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

484 475 544

```
476 IESERGVINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVIISVSFVAMGHMMYRRFAXK 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNIIAPMAVG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QIMAFGSHFIGCGFISGWNLFSMCLEYFILWKVYOKTPALAFKAGOKDSDDQELKHLNIQ 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KD---TEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKE-EETELKQLNLH 252
                                                                                             -TTEPPI ----QANVTVFEEAPPVESYMSVGLLFAGVIAARVGLWSFDLTVTQLIQENV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          304 AGMSLAFLYMTVLGFDCITTGYAYTQGLNGSVLSLLMGASAVSGICGTVAFTWIRKKCGL
                                                                           VRIGLISGLAQUSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGES----ITPTKIPE
                                                                                                                                                                                             IESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQN
                                                                                                                                   426 ITTEIYMSNGSNSANI-VPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CERFREFFKSAKFLIYVGHALSTWGDRMWNFAVAVFLVELYGNSLLLTAVYGLVVAGSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMWVFLHKHELLTMYHGWVLTSCY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Kidney;

MEDLINE=20155474; PubMed=10693807;

MEDLINE=20155474; PubMed=10693807;

Donovan A., Brownline A., Zhou Y., Shepard J., Pratt S.J., Moynihan J. Paw B.H., Drejer A., Barut B., Zapata A., Law T.C., Brugnara C., Lux S.E. IV, Pinkus G.S., Pinkus J.L., Kingsley P.D., Palis J., Fleming M.D., Andrews N.C., Zon L.I.;

"Postitional Cloning of Zebrafish Ferroportini Identifies a Conserved Vertebrate Iron Exporter.";

Nature 403.776-781 (2000).

EBMBL, AF226612; AAF36695.1; --
ZFIN; ZDB-GENE-000511-8; slc39a1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Brāchydanio rezio (Zebrafish) (Danio rerio).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67.3%; Score 1971.5; DB 13; Length 562; 70.8%; Pred. No. 4.7e-143; ive 65; Mismatches 72; Indels 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             562 AA; 61760 MW; 38A6838E2107FBAF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                      Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                      558
                                                                                                                                                                                                                                                                                   550
                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2002 (TrEMBLrel. 22,
                                                                                                                                                                                                                                                                       SLGSRLFLFCSPEOK
                                                                                                                                                                                                                                                     TLGNKLFA-CGPDAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
tes 393; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                               SLC39A1 OR FPN1
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ferroportin1
                                                                           370
                     310
                                                                                                                                                                  422
                                                                                                                                                                                             485
                                                                                                                                                                                                                                                      545
                                                                                                                                                                                                                                                                                  536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                         Q919R3
                                                                                                                                                                                                                                                                                                                              RESULT 8
                                                                                                                                                                                                                                                                                                                                           Q9I9R3
                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                  임
                                                                                                                                                               g
                                                                                                                                                                                                                  g
                                                                           ઠે
                                                                                                                                  ò
                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                   240
                                                                                                                                                                                                                                                      478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10,
                                                                                                                                                                                                                          479
                                                                                                                                                                                                                                                                                                              538
                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74 VLGALIGDWYDKNARLKYAQTSLVVQNVSVILCGIILMMVFLHKHBILTWYHGWVLTSCY 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKE-EETELKQLNLH 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KD---TEPKPLEGTHLMGVKDSNIHBLEHBQEPTCASQMAEPFRTFRDGWVSYYNQPVFL 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVG 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 251 KEIGNTE-SPVEASQLM-----TESSEPKKDTGCCYOMAEPIKTFKDGWVAYYNOSIFF 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
SYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSVLMGASAITGIMGTVAF
                                                                                                                                                                              LOENVIESERGIINGVONSMNYLLDLIHHIHHIHHIHHHHHHHHHHHHHHHHHH
                                             EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV
                                                                 SYXNOPVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAF
                                                                                                                                                               TWLRRKCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESI-T
                                                                                                                                                                                                                     PTKI PEITTEI YMSNGSNSANI VPETSPESVPII SVSLLFAGVIAARIGLWSFDLTVTQL
                                                                                                                                                                                                                                                  TTKIPE--TEMLMSNVSNVVNTVHEMSTKSVPIISVSLLFAGVIAARIGLWSFDLTVTQL
                                                                                                                                                                                                                                                                                LQENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14 CGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CERFREFFKSAKFLIYUGHALSTWGDRWMNFAVAVFLVELYGNSLLTAVYGLVVAGSVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           w.c.r.,
01-OCT-2002 (TrEMBLrel. 22, Created)
01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-OCT-2002 (TrEMBLrel. 22, Last annotation update)
S1:d2210013.7 (Solute carrier family 39 (Iron-regulated transporter),
s1c39A1.
SLC39A1.
Brachydanio rerio (Zebrafish) (Danio rerio).
Brachydanio rerio (Zebrafish) (Danio rerio).
Cukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
NGBI TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67.4%; Score 1975.5; DB 13; Length 562; 71.0%; Pred. No. 2.3e-143; ive 64; Mismatches 72; Indels 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Babbage A.;
Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AL591593; CAD43474.1; -. 35CB30971553718F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Æ.
                                                                                                                                                                                                                                                                                                                                                         RFAQNTLGNKLFACGPDAKEVRKENQANTSVV
                                                                                                                                                                                                                                                                                                                                                                                                                                              562
                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 71.0
les 394; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                             241
                                                                        241
                                                                                                     301
                                                                                                                                  301
                                                                                                                                                               361
                                                                                                                                                                                          361
                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                           479
                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131
                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                                                           QBJFW0;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8JFW0
                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                음
                                                                 셤
                                                                                                                             g
                                                                                                                                                                                  g
                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                    g
                                           ò
                                                                                                  ò
                                                                                                                                                           ò
                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               중 . 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
```

133

```
354 PGSPFDLSVSPFEEV-LRHLFGDSGSLRESPTFIP--TTEPPI-----QANVTVFEEAPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PGSPLDLSVSPFEDIRSRFIQGES----ITPTKIPEITTEIYMSNGSNSANI-VPETSPE
                                                                                                                           130 TSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRIDQLTNILAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LINLHKD---TEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306 PVFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        234 KCGLIRTGFIAGVTQLSCLTLCVASVFAPGSPFDLSVSPFEEV-LRHLFGDSGSLRESPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         293 FIP--TTEPPI-----QANVTVFEEAPPVESYMSVGLLFAGVIAARVGLWSFDLTVTQLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QENVIESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFR
                                                                                                     SVPIISVSLLFAGVIAARIGLMSFDLTVTQLLQENVIESERGIINGVQNSMNYLLDLLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KCGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGES----ITPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KIPEITTEIYMSNGSNSANI-VPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brachydanio rerio (Zebrafish) (Danio rerio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
SI:bX113D7.1 (Solute carrier family 39 (Iron-regulated transporter)
sLibX13D7.1 (Fragment).
                                                                                                                                                                                      509 IMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNKLFA-CGPDAK 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51.7%; Score 1513.5; DB 13; Length 436; 69.7%; Pred. No. 5.1e-108; ive 51; Mismatches 57; Indels 25;
                                                                                                                                                                                                           466 IMVILAPNPEAFGLLVIISVSFVAMGHMMYFRFAYKSLGSRLFLFCSPEOK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47761 MW; 3A1AE783CAB92FBC CRC64;
                                                                                                                                                                                                                                                                                                                                     Ā
                                                                                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 FAQNTLGNKLFA-CGPDAK 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           || :||:|| | |:|
FAYKSLGSRLFLFCSPEQK 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sehra H.;
Submitted (DEC-2002) to the
EMBL; AL672118; CAD52128.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    306; Conservative
                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    436 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
Matches 30
                                                                                                                                                                                                                                                                                                                                       Q8AW28
                                                                                                                                                                                                                                                                                         RESULT 10
Q8AW28
                                                 g
                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                     ò
                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                           425
                                         369
                                                                                                                                                                                                           484
                                                                                                                                                                                                                                                    475
                                                                                                                                                                                                                                                                                              544
                                                                                                                                                                                                                                                                                                                                     535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VEYVLLWKVYQKTPALAVKAGLKE-EETELKQLNLHKD---TEPKPLEGTHLMGVKDSNI 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HELEHEQEPTCASQMAEPFRIFRDGWVSYYNQPVFLAGMGLAFLYMTVLGFDCITTGYAY 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLILCVISVFM 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97
                                                                 -TTEPPI ----QANVIVFEEAPPVESYMSVGLLFAGVIAARVGLWSFDLTVTQLIQENV
                                                                                                                                                                                                                                                                                                                 KEIGNTE-SPVEASQLM----TESSEPKKDTGCCYQMAEPIRTFKDGWVAYYNQSIFF
                                         AGMGLAFLYMTVLGFDC1TTGYAYTQGLSGS1LS1LMGASA1TG1MGTVAFTWLRRKCGL
                                                                                                                           VRIGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGES----ITPTKIPE
                                                                                                                                                                                                           ITTEIYMSNGSNSANI-VPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENV
                                                                                                                                                                                                                                                                                           IESERGIINGVQNSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GDRMWNFAVAVFLVELYGNSLLLTAVYGLVVAGSVLLLGAIIGDWVDKNPRLKVAQTSLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WIVVVAGEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VQNVSVILCGIILMMVFLHKHELLTMYHGWVLTSCYILIITIANIANLASTATAITIQRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESSETKKDTGCCYQMAEPIRTFKDGWVAYYNQSIFFAGMSLAFLYMTVLGFDCITTGYAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brachydanio rerio (Zebrafish) (Danio rerio).
Eukaryota, Metazoa; Chordata, Craniata, Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-WAR-2003 (TrEMBLrel. 23, Created)
01-WAR-2003 (TrEMBLrel. 23, Last sequence update)
01-WAR-2003 (TrEMBLrel. 23, Last annotation update)
SI-GAZB2H3.5 (Solute carrier family 39 (Iron-regulated transporter)
SIC39A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 13; Length 528;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kimberley A.;
Submitted (DEC-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AL672145; CAD58776.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          528 AA; 57748 MW; 07ECE661DBE18851 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64.7%; Score 1894.5; DB 13
llarity 71.8%; Pred. No. 3.5e-137;
Conservative 59; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                   :||::|| |: |
SLGSRLFLFCSPEQK 550
                                                                                                                                                                                                                                                                                                                                                                              TLGNKLFA-CGPDAK 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          381;
  251
                                       310
                                                                                  304
                                                                                                                         370
                                                                                                                                                                364
                                                                                                                                                                                                         426
                                                                                                                                                                                                                                                                                                                                  476
                                                                                                                                                                                                                                                                                                                                                                              545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         218
                                                                                                                                                                                                                                                  422
                                                                                                                                                                                                                                                                                           485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                       g
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STAR PROCESS OF THE STAR PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF THE PROCESS OF 
                                                                                                                     ò
                                                                                                                                                     셤
                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

10;

Gaps

189

9

305

7; Сарв

120 442

502

385

9

11 RESULT Q9Z1C9

g ð a ò g ∂ g 유 ò 셤 ઠ 셤

ò

```
177 HEMSTKPIPIVSVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESERCIINGVQNSMNYL 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMYFRFAQNTLGNKLFACGFDAKEVRK 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                326 CITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLI 385
                                                                                                                                                                                                                                                                                                                                                                            CITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLFSGLAQLSCLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Suzuki Y.,
A Nishikawa T., Nagai K., Sato H., Sugano S., Shiratori A., Sudo H.,
A Mishikawa T., Nagai K., Sato H., Sugano S., Shiratori A., Sudo H.,
A Takahashi M., Hosoiri T., Kaku Y., Kodaira H., Kondo H., Sugawara M.,
A Takahashi M., Chiba Y., Ishida S., Murakawa K., Ono Y., Takiguchi S.,
A Watanabe S., Kimura K., Murakami K., Ishii S., Kawai Y., Saito K.,
A Namanoto J., Wakamatsu A., Nakamura Y., Nagahari K., Masuho Y.,
A Ninomiya K., Iwayanagi T.,
Bubon con the EMBL/GenBank/DDBJ databases.
EMBL; AK002038; BAA22049.1; -.
InterPro; IPR001993; Mitoch carrier.
B PROSITE; PS001215; MITOCH—CARRIER; 1.
Hypothetical protein.
SEQUENCE 167 AA; 18252 MW; 8D391F5356733660 CRC64;
                                                                                                                                                                                       266 MGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVLGFD
                                                                                                                                                                                                                             1 MGEKDSNIRELECEQEPTCASOMAEPFRTFRDGWVSYYNOPVFLAGMGLAFLYMTVLGFD
                                                                                                                                                                                                                                                                                                                                                    LCVISVEMPGSPLDLSVSPFEDIRSRFIQGESITP-TKIPE--ITTEIYMSNGSNSANIV
                                                                                                                                                                                                                                                                                                                                                                                                                                   443 PETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIESERGIINGVQNSMNYL
                                                                                                                                                                                                                                                                        CITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 266 MGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWVSYYNQPVFLAGMGLAFLYMTVLGFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MGVKDSNIHELEHEQEPTCASQMAEPFRFFRDGWVSYYNQPVFLAGMGLAFLYMTVLGFD
                                                                                                          DB 11; Length 305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Eutele
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                    Ouery Match
46.4%; Score 1360.5; DB 11; Lengt
Best Local Similarity 88.0%; Pred. No. 1.8e-96;
Matches 272; Conservative 11; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels
60,770 full-length cDNAs.";
Nature 420:563-573(2002).
EMBL; AK032732; BAC28001.1; -.
SEQUENCE 305 AA; 33574 MW; EC9FE6264AF4D887 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 859; DB 4;
Pred. No. 2.8e-58;
2; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  167 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypothetical protein FLJ11176.
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 98.8%;
Matches 165; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ||| |||||
ENQPNTSVV 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENQANTSVV 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
TISSUE=Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                      326
                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                    386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
      SRR
                                                                                                                                                                                       ò
                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DQLTNILAPMAVGQIMTFGSPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLK 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAVYGLVVAGSVLVLGAIIGDWVDKNARLKVAQTSLVVQNVSVILCGIILMMVFLHKHEL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LTMYHGWVLTSCYILIITIANIANLASTATAITIQRDWIVVVAGEDRSKLANMNATIRRI 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EEETELKQLNLHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 VEESELKOLTSPKOTEPKPLEGTHLMGEKOSNIRELECEGEPTCASQIAEPFRTFRDGWV 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SYYNQPVFLAGMGLAF-----LYMTVLGFDCITTG--YAYTQGLSGSILSILMGAS 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=CS7BL/6J; TISSUB=Mesonephros;
MEDINDE=22354683; PubMed=1246681;
The FANTOM Consortium.
the RIKEN Genome Exploration Research Group Phase I & II Team;
"Analysis of the mouse transcriptome based on functional annotation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MTRAGDHNRQRGCCGSLADYLTSAKFLLYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLL
                                                                                                                                                                                                    Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                               50.5%; Score 1479.5; DB 11; Length 405; llarity 78.4%; Pred. No. 1.9e-105; Conservative 15; Mismatches 36; Indels 31;
                                                                                                                                                                                                                                                                                                                           Yang X.Z.;
Submitted (OCT-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                               EMBL; U76714; AAD00260.1; -. SEQUENCE 405 AA; 45145 MW; ABDF5916C43AA4DA CRC64;
                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
                                                             405 AA
                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 350 AITGIMGTVAFTWLRRKCGL 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----NWNGNCGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23, Solute carrier family 39. Mus musculus (Mouse).
                                                                                                    (TrEMBLrel. 10, (TrEMBLrel. 10, (TrEMBLrel. 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                   01-MAY-1999 (TrEMBLrel.
01-MAY-1999 (TrEMBLrel.
Cell adhesion regulator.
                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
Matches 298; Conserv
                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                           NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                    01-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352
                                                         Q9Z1C9
Q9Z1C9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OBBMES
```

Euteleostomi;

ö

0; Gaps

OG BMES OG BO OG CO

ò 셤

```
|::|:||:||:||::|| |::|| |::|| |::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||:|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|| ||::|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---LHKDTEPKPLEGTHLMGVKDSNIHELEHEQEPTCASOMAEPFRTFRDGWVSYYNOPV 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RLKVAQTSLVVQNVSVILCG---IILMMVFLHKHELLTMYHGWVLTSCYILIITIANIAN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97 YVKVLRLWLVTQNLSFIVAGGAVVALLVVPDLKSQNFPV-----FATLVVLTNLSG 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----LASTATAITIQRDWIVVVA-GEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKC 367
                                                                                                                                                                    311 VLPGVSLALLFFTVLSFGTLMTATLEWKGIPTYIIGIGRGISAGVGLAATVLYPLMQSRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTEIYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALA---VKAGLKEBETELKQLN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           268 VPLLHEEESYRNTQS-----RSRILRILERISE-----SSFVSAWRNYLNQEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots, Rosidae,
eurosids II; Brassicales, Brassicaceae, Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LYLGHSLSTWGDRMWHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELYMSNGSNSANIVPETSPESVPIISVSLLFAGVIAARIGLWSFDLTVTQLLQENVIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ς
:
                                                                                                                                                                                                                                                                                                                 126;
                                                                                                                                                                                                                                                                            SERGIINGVONSMNYLLDLLHFIMVILAPNPEAFGLLVLISVSFVAMGHIMY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 19.3%; Score 564; DB 10; Length 4. Local Similarity 27.5%; Pred. No. 5.3e-35; Les 153; Conservative 102; Mismatches 175; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bevan M., Pohl T., Weizenegger T., Bancroft I., Mewes H.
Lemcke K., Mayer K.F.X.,
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EU Arabidopsis sequencing project;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AL162751; CABB3320.1;
SEQUENCE 498 AA; 55504 WW; DBA4C5F6182799BD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 æ
LSTLRTGLWSFWSQWSCLLVCVGSIWVKKDK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana (Mouse-ear cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. 15, (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPLRTGVWSFWSQK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transporter like protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - - - VM-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2000
                                                                                                                    427
                                                                                                                                                                                                                                                                            487
                                                                                                                                                                                                                                                                                                                                                     439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             390
                                                                                                                                                                                                    405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88 RLKVAQTSLVVQNVSVILCG---IILMMVFLHKHELLTMYHGWVLTSCYILIITIANIAN 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----LASTATAITIQRDWIVVVA-GEDRSKLANMNATIRRIDQLTNILAPMAVGQIMTFG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |:: | | |:| | |:: | | |:: | | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | |:: | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LEGTHLMGVKDSNIHELEHEQEPTCASQMAEPFRT-----FRDGWVSYYNQP 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VSVSIVPGTEEG-----YTGNP-----PSRTGILVILDRMSKSSFVGAWRIYFNQE 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VFLAGMGLAFLYMTVLGFDCITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRK 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 314 VVLPGVSLALLFFTVLSFGTLMTATLQWEGIPTYIIGIGRGISATVGLAATLVYPLMQSR 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             367 CGLVRTGLISGLAQLSCLILCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEI 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-CV. Columbia;

MEDLINE=20083487; PubMed=10617197;

Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D.,

Luin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D.,

Rujii C.Y., Mason T.M., Lee J.J., Barnstead M.E., Feldblyum T.V.,

Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S.,

Cronin L.A., Shen M., VanAken S.E., Umayam L., Tallon L.J., Gill J.E.,

Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R.,

Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A.,

Salzberg S.L., Fraser C.M., Venter J.C.;

"Sequence and analysis of chromosome 2 of the plant Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LYLGHSLSTWGDRMMHFAVSVFLVELYGNSLLLTAVYGLVVAGSVLVLGAIIGDWVDKNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPVIGCGFISGWNLVSMCVEYVLLWKVYQKTPALAVKAGLKEEETELKQLNLHKDTEPKP
CITTGYAYTQGLSGSILSILMGASAITGIMGTVAFTWLRRKCGLVRTGLISGLAQLSCLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        212 SLKASAITFAAWATITAWVEYWLFISVYSGVPAIT----RSNERRILRSRTKQVEGRDAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  eudicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tracheophyta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.9%; Score 612.5; DB 10; Length 524; 29.1%; Pred. No. 1.1e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95; Mismatches 179; Indels
                                                                                                                    LCVISVEMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITM
                                                                                                                                                                LCVISVFMPGSPLDLSVSPFEDIRSRFIQGESITPTKIPEITTEIHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL, AC004683; AAC28758.1; -. SEQUENCE 524 AA; 58204 MW; 781C6C0A697FADB1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Embryophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Viridiplantae, Streptophyta, Embryophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core e
eurosids II, Brassicales, Brassicaceae, Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arabidopsis thaliana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08,
08,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 155; Conservative
                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nature 402:761-768(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-DEC-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1998 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1998 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
STRAIN=cv. Columbia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (MAR-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=cv. Columbia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          At2g38460 protein.
                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307
                                                61
                                                                                                                    386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                 RESULT
080905
```

DDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDDTTDD

12;

96

389

원

ò g ò g 8 1

유 ò

ò

a à g

à

```
488 ERGIINGVONSMNYLLDLIHFIMVILAPNPEAFGLLVLISVSFVAMGHIMY----- 538
දු දු
```

ор	422 DRCVVGGVQNSLQSALDLMANLLGIIVSNPKDFWMLTLISFATVSLAGILYTIHLYRIRK 481
ò	539FRFAQNTLGNKLFA 552
qq	482 HLFHLEKIPLLNNFFA 497

Search completed: November 5, 2003, 18:30:50 Job time: 62 secs

THIS PAGE BLANK (USPTO)